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RESEARCH INTO THE POTENTIAL OF SHORT INTERVENTIONS
IN PROMOTING WELL-BEING AMONG ADOLESCENTS

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**Research into the potential of Short Interventions in
Promoting Well-Being Among Adolescents**

Thesis presented to fulfil requirements for PhD degree by

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Submitted 2014

Declaration

I hereby declare that this thesis is my own work and has not been submitted for another degree, either at University College Cork or elsewhere.

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To Dr. Mike Murphy and Dr. Zelda Di Blasi for their assistance and guidance throughout this process.

To my family, for their support.

Abstract

The present research examines the issue of universal interventions designed to enhance well-being among a community-based adolescent population. The first phase saw a cross-sectional survey conducted among Transition Year students in 13 secondary schools in Cork city and county, Republic of Ireland, with a view towards identifying dimensions linked with well-being (operationalised as subjective happiness, life satisfaction, and depressive symptoms) and which might prove effective in informing intervention approaches. Arising from this, mindfulness, gratitude, and cognitive-behavioural dimensions emerged as predictors of well-being, and short interventions (four sessions/four weeks) informed by each were conducted with participant groups in three secondary schools, one intervention in each school. Results from statistical analysis showed that the mindfulness and cognitive-behavioural interventions facilitated significant reductions in depressive symptoms among active condition participants at post-test, but that these benefits were not sustained over time, while no statistically significant changes were detected on subjective happiness and life satisfaction. The gratitude intervention was found to have had no effect on the three outcome variables. The findings are discussed in the context of theory and past research, while limitations, implications, and possible future directions are also addressed.

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1. ADOLESCENTS AND WELL-BEING

Adolescence can be a highly challenging period in terms of development and mental health. Costello, Copeland, and Angold (2011) report that approximately 20% of adolescents worldwide have a psychiatric disorder. It is a period characterised by wide-ranging changes, with physical and cognitive development taking place against the backdrop of additional changes in the social environment of individual adolescents (e.g., Blakemore, 2008). The upheaval associated with this period can leave adolescents more vulnerable to a range of mental disorders, such as depression (e.g., Costello, Mustillo, Erkanli, Keeler, & Angold, 2003). Thapar, Collishaw, Pine, and Thapar (2012) reported that unipolar depressive disorder is a common health problem for adolescents throughout the world, estimating a prevalence rate of 4-5% during mid-to-late adolescence. While the fact that adolescence is a period of vulnerability justifies research attention in its own right, it is also important to note that mental health issues which begin in adolescence can persist into adulthood. Jones (2013) highlights that as many as half of the mental health disorders reported by adults can be traced back to this period. In Ireland, Lynch, Mills, Daly, and Fitzpatrick (2006) found that 19.4% of more than 700 secondary school students were 'at risk' for psychiatric disorders and suicidal behaviours, noting that these figures indicated that the situation in this country was similar to that seen elsewhere in Western cultures.

Findings such as those referred to above highlight the need to work towards positive interventions for adolescent mental health, where the emphasis is on prevention as opposed to focusing exclusively on the treatment of disorders after they have been detected. With Jones (2013) pointing to the link between adult mental problems and

adolescent-onset disorders and Hawkins et al. (2012) noting the beneficial social, health, and behavioural outcomes in young adulthood arising from positive development in late adolescence, this highlights the desirability of seeking to enhance well-being among young people.

Well-being can be defined and characterised in many different ways, but as the focus of this research is on adolescents' awareness and feelings about themselves, the emphasis here will be on subjective well-being (SWB). Diener and Chan (2011) state that SWB refers to the evaluations that individuals make about their own lives, with these judgements relating to, for example, life satisfaction and feelings-based evaluations, i.e., moods and emotions. In light of the role of moods and the recognition that these will not always be positive, depressive symptoms will also be incorporated into the model of well-being used in this research.

The positive psychology movement has become closely associated with efforts to enhance well-being among various populations. As elucidated by Seligman and Csikszentmihalyi (2000), the core purpose of positive psychology is to conduct research into what goes 'right' with people as opposed to what goes 'wrong' and to communicate the message that it is at least as important for psychologists to work towards identifying and cultivating positive individual attributes and strengths as it is to focus on alleviating symptoms of negative mental functioning.

In this research, participants in mid-adolescence were recruited from Transition Year classes in secondary schools throughout Cork city and county. In the first instance, a survey was conducted, with a view towards establishing to what extent a range of

relevant variables predicted levels of well-being among participants. For these purposes, well-being was operationalised as subjective happiness, depressive symptoms, and life satisfaction, with questionnaires included in the survey to assess each of these dependent variables. Cognitive-related independent variables in the survey included attributional style, optimism, self-efficacy, resilience, and self-esteem. The other independent variables assessed were gratitude and mindfulness, while personality and sex were used for control purposes.

Following on from the survey, an intervention phase was conducted. This element of the research saw three secondary schools in Cork each hosting one intervention utilising a technique designed to enhance well-being among participants. Well-being was once again operationalised as subjective happiness, depressive symptoms, and life satisfaction, while the selection of intervention techniques was informed by the findings of the initial survey, with gratitude, mindfulness, and cognitive-based approaches used.

This thesis will examine the literature in relation to adolescence, well-being, and all variables used in the initial survey. It will proceed to outline the method and methodology used in each of the four studies, along with presenting the analysis of data accumulated during those studies and offering brief summaries of each set of results, before proceeding to discuss the overall findings.

2. ADOLESCENCE

2.1 Adolescent demographics

According to the most recent United Nations (UN) report on population (2013), there were almost 1.2 billion teenagers (aged 10-19) in the world as of 2010. This is a large number in its own right, but also constitutes more than 16% of the official world population (7.2 billion). While declining fertility and rising life expectancy have contributed to a trend whereby adolescents account for a smaller proportion of the global population than previously, predicted population trends will see the absolute number of teenagers increase in the coming decades. The same UN document projects that the global population will reach 9.6 billion by 2050 and 10.9 billion by 2100.

In the Republic of Ireland, the most recent Central Statistics Office data (2013) shows that in 2011 there were almost 600,000 males and females aged 10-19 living in the country. This figure represents 12.76% of the total population of more than 4.5 million.

The above figures indicate that based on numbers alone, young people as a group merit the attention of psychologists. However, as will be outlined in this chapter and those to follow, there are many grounds to justify research into and efforts to enhance adolescent well-being.

2.2 Defining adolescence

There is no single accepted, universal definition of adolescence, particularly as it relates to age boundaries. However, the World Health Organisation (WHO, 2012) has

defined adolescence as the period in life experienced by young people between the ages of 10 and 19 years. While offering this definition, the organisation also recognises the imprecise nature of this point in the lifespan by offering accompanying boundaries for youth as being 15 to 24 years, and a wider category for young people, encompassing all individuals aged between 10 and 24.

Steinberg (2008) also defines adolescence as taking place across an approximate period of 10 years. As with the WHO, he recognises that to regard adolescence as a single developmental period risks failing to capture the complexities and nuances of this part of the human lifespan. To do so would effectively categorise an 11-year-old under the same heading as a 19-year-old, despite the fact that this eight year gap will, in almost all cases, host profound changes across a range of developmental dimensions, including biological, emotional, and cognitive, as well as educational and legal standings.

Recognising the distinctions that need to be made even within adolescence itself, Steinberg (2008) points to the tendency among social scientists focusing on this period to differentiate in terms of early adolescence (approximately ages 10-13), middle adolescence (ages 14-17), and late adolescence (ages 18-21 or so). The research being reported in this thesis focuses on an initial survey and follow-up intervention studies conducted with a participant population of school-going adolescents, with the vast majority of participants aged 15-16 years. This population sample resides broadly in mid-adolescence, as set out by both the WHO (2012) and Steinberg.

Cobb (2007) presents three answers to the question of what is adolescence. She offers separate and distinct biological, psychological, and sociological definitions.

In biological terms, puberty is the key marker of the transition from childhood to adolescence, with changes associated with this phase existing independent of cultural influences, and in that respect the reality of puberty represents the only universal element marking adolescence throughout the world. While the biological and physical changes associated with puberty do not occur on a set timetable, the ultimate outcome will be the same – the individual begins puberty as a child, but by the end of the process has become a physically mature adult. The period is defined by growth, with different hormones controlling the process and facilitating what is termed as sexual dimorphism, the coming to the fore of the physical differences between the sexes – height, weight, body shape, and the reproductive system.

While puberty has come to be regarded as a reliable marker of the beginning of adolescence, in biological terms it is far more difficult to identify its end. The process of puberty takes from two to four years to run its course, and can conclude as early as age 14, but no researcher in the field would suggest that 14 could be taken to mark the end of adolescence. Highlighting this point, Cobb (2007) says the task of identifying an end point for adolescence necessitates the consideration of psychological and sociological perspectives.

With regard to the psychological perspective, the challenge for individuals at this point in life is to confront and successfully negotiate a range of developmental challenges, with a key marker of adolescence being the individual capacity to develop a more complicated sense of self, a level of personal awareness that forms a bridge

between childhood and adulthood. Developmental theories relevant to adolescence will be looked at in more depth in the next section, but for now it is appropriate to consider this line of thought in the context of Erikson's (1963) psychosocial stages of development. This theory sets out eight life stages from infancy to late adulthood, in which each individual must confront and master new challenges. According to Erikson, the teenage years are a period in which identity confusion comes to the fore, and that the key challenge for adolescents is to achieve a stable sense of self. This process takes place as adolescents test roles and then, ideally, integrate them as they form a single identity. The sense of themselves that adolescents develop arises from the main driving forces for change experienced in early adolescence – puberty, cognitive growth, and changing social expectations. Puberty tends to start the process, with the internal cognitive changes that follow creating a more sophisticated level of self-awareness among young people, as well as an awareness of the expectations that others have towards them. This is accompanied by fresh social expectations, with parents and others expecting the young person to develop a new maturity when some of the physical and cognitive changes associated with adolescence become apparent. This expectation demands that adolescents begin to behave in a more adult-like manner. This combination of physical maturation, changes in self-awareness, and altered social expectations comes together to present the individual with developmental challenges. These challenges can be driven by specifics related to the culture in which an individual lives. Again, as detailed by Erikson, the purpose of these challenges is to facilitate the individual's development of a stable sense of self as they move further into adolescence and closer to adulthood. Havighurst (1972) identified eight key developmental challenges that each individual must face during adolescence, including *inter alia* achieving emotional independence from parents,

developing new and more mature relations with peers, acquiring a set of values as a guide to behaviour, and achieving socially responsible behaviour. Pinquart, Silbereisen, and Wiesner (2004) conducted a study into changing discrepancies between desired and present states relating to developmental tasks in adolescence. The researchers accessed data collected during the course of the Berlin Youth Longitudinal Study, conducted during the 1980s across four waves in more than 70 West Berlin schools. For the purposes of that study, data gathered during waves 2-4, stretching over a two-year period, were analysed. The average age of the 1,234 participants involved at wave 2 was 13.7 years, while approximately 50% were male. Progress on five developmental tasks was assessed, with participants first asked to report on their current state of development on each task (e.g. Are you currently in love with a boy/girl?), then asked about their desired state of development (e.g., Do you want to fall in love with a boy/girl in the near future?). They found that over time bridging the gap between higher desired than actual developmental states was associated with increased self-esteem, thus highlighting the psychological benefits that can accrue to adolescents who successfully meet these challenges.

Cobb (2007) maintains that forming ideas on when adolescence ends also demands consideration of a sociological perspective. In these terms, individuals are defined in the context of their position within a society, with self-sufficiency a key factor. From that perspective, adolescents exist in a space between the easier categorisations of childhood and adulthood, as they are neither self-sufficient nor wholly dependent. To address this ambiguity, the end of adolescence in Western societies tends to be marked by age-limit legislation, with a view towards offering legal protection to those not yet deemed to be adults.

Cobb (2007) concludes that each of the three definitions of adolescence she offers are incomplete when looked at in isolation, but considered together offer a well-rounded picture. This view proposes that adolescence is best defined as a time in life that begins with biological maturation, heralding a period in which individuals are faced with developmental tasks, and ends when a self-sufficient state of adulthood is achieved in accordance with the norms set down by society. However, from a strictly psychological perspective, it could be argued that the sociological element in this definition is somewhat arbitrary, and a pragmatic solution offered to meet the needs of a given society rather than recognition of how the course of adolescence plays out in each individual.

Steinberg (2008) also addresses the ongoing processes of change that are inherent in adolescence, dealing with them in three categories – biological, cognitive, and social transitions. With regard to biological transitions, he stresses the variations in timing and tempo of puberty, drawing attention to the arbitrariness of attempts to break early/mid/late adolescence and the transition into adulthood into specific years. In fact, he makes a point of stressing that he avoids referring to ‘normal’ ages for pubertal changes because of the potential for variety, adding that this variety can be so great that “it is misleading to talk even about average ages” (p. 34).

Steinberg’s (2008) overview of the state of knowledge on adolescence and where it starts and ends differs most from that outlined by Cobb (2007) in terms of the social environment element. Cobb (2007) offers the view that adolescence emerged as a period in the lifespan linking the end of childhood as signalled by the onset of puberty with entrance into adulthood, when the individual crosses over into an age governed

by new legal requirements; Steinberg does not openly contradict this perspective, but also speaks of the elongation of adolescence, either through earlier onset of puberty and/or later entry into the world of work or family. He points to how in previous eras puberty would occur at around age 15, with individuals leaving school and entering the workplace on a full-time basis a few years later. By that rationale, adolescence only lasted a few years. Steinberg contrasts that with the more common scenario in Western societies nowadays, whereby “young people are caught between the world of childhood and the world of adulthood for an extremely long time, often longer than a decade, and frequently with only a vague sense of when – and how – they became adults” (p. 95). Steinberg goes on to state that the extension of adolescence brings with it implications for how young people see themselves and relate to others, and also how they develop psychologically.

2.3 Developmental theories of adolescence

There are a number of developmental theories which have been proposed over the last century or so, with a view towards explaining the human lifespan in terms of stages. These stages each present unique challenges, and individuals must overcome those challenges if a healthy developmental path is to be followed.

Unsurprisingly, the development of youths has tended to figure prominently in this field of work. Regardless of the emphasis of each perspective, there is unanimity on the point that adolescence is a time of great challenge for those going through it.

Among the more influential of these theories have been Freud’s psychosexual stage theory, Erikson’s psychosocial stage theory, and Carstensen’s socioemotional selectivity theory.

Freud's (1949) psychoanalytic theory on development is predicated upon the assertion that conflicts between inborn drives and societal drives (with the inborn drives reflected in the three elements of personality that develop in childhood – the id, the ego, and the superego) lead to five stages of development – oral (year one), anal (ages 1 to 3), phallic (ages 3 to 5), latency (age 5 to puberty), and genital (adolescence and adulthood). Freud's theory came to be widely criticised for placing a strong emphasis on sex and aggression, for developing his thoughts based on engagement with a very narrow sample of the population (wealthy European women), and for developing his theories without ever engaging in first-hand research with children. However, it is also acknowledged that he made a lasting contribution by drawing attention to issues which have endured as focuses of research – the importance of early experiences, parent-child relationships, and psychosexual development.

Erikson began to make his mark in the 1960s, continued to contribute to the discussion around lifespan development into the 1980s, and is best known for his theory of psychosocial development which encompasses eight stages (1963). Erikson's work placed a major emphasis on the emergence of the self, individuals looking for an identity, relationships with others, and the influence that surrounding culture can exert throughout life. For Erikson, each developmental stage brings with it a moment of crisis, and when this crisis is successfully met, the individual is ready to move into the next stage. The fifth stage in Erikson's theory broadly corresponds to the second decade of life. In this stage, as alluded to in the previous section, the key crisis relates to identity versus role diffusion. At this point in life, cognitive processes are expanding and becoming more refined, as the young person develops the capacity for abstract thinking and is better able to understand the perspective of others. It is in

this period when the young person begins to grapple with notions of identity, with a view towards creating a space and context in which to move into adult life.

Erikson has been broadly credited with launching the lifespan approach to developmental psychology and his theories continue to be regarded as useful, particularly with adolescence. However, negative criticism has been levelled at his approach, with one of the main points in this respect being that his stage theory is largely descriptive – the main emphasis is on what happens and when it happens, as opposed to how or why the factors he identifies are implicated in the process of change.

Carstensen's socioemotional selectivity theory (SST) is less concerned with age-related differences than how time is perceived, but age does figure prominently given it is acknowledged that how the passage of time is perceived tends to be strongly linked with age, i.e., older people tend to have a more pronounced sense of mortality than younger people, with this in turn likely to influence how they think about time.

Carstensen, Isaacowitz, and Charles (1999) elaborated the core of SST in these terms – when time is perceived as being open-ended, individuals will tend to prioritise knowledge-related goals and objectives; however, when it is felt that available time is limited, more emotional goals will tend to come to the fore. Against this backdrop, SST is preoccupied with seeking to address the role of time in predicting what goals people will pursue, as well as the social partners with which they look to pursue them. The theory was developed with three core presumptions in mind: the belief that social interaction is core to survival, that humans are guided by anticipated outcomes when

they engage in behaviours, and that people can hold many, sometimes opposing goals simultaneously. Also, SST posits that the perception of available time as expansive or limited will impact strongly on the internal appraisal process that takes place during the course of goal selection.

Specifically relating SST to a lifespan perspective, Carstensen (1995) proposed that emotion regulation is prioritised in infancy and childhood, but that this emphasis declines during adolescence, bottoms-out in early adulthood, gradually increases as we approach middle-age, and then becomes more important as we move towards and through old age. Thoughts around self-concept become increasingly prioritised throughout childhood and into adolescence, then decline through adulthood, before stabilising in middle-age and remaining steady from that point onwards. SST suggests that information seeking is the most salient of the three social motives up to middle age, when its decline coupled with the increased emphasis on emotion regulation sees the latter surpass it, and by old age information seeking tends to be the least prioritised of the motives.

Carstensen (2006) attempted to explain these shifting emphases as being a function of how human motivation is affected by time horizons. This can relate to where individuals are in terms of the lifespan, but she also points to other possible contexts. Specifically, she states that “goals, preferences, and even cognitive processes, such as attention and memory, change systematically as time horizons shrink” (p. 1913), and that because chronological age correlates with perceived time left in life there will be systematic associations between age and time horizons, but that when time perspective is controlled or manipulated, many age-related differences vanish. She

sums up this point by stating that older and younger people are likely to behave similarly across a range of dimensions when time horizons are equated. She points to examples such as the terrorist attacks of September 11, 2001, the SARS epidemic in Hong Kong, and the period when HIV was untreatable as examples of situations in which the fragility of life was acutely felt and eliminated markers of age differences on some measures of motivation, making young people more likely to view their social world in similar terms to older people.

2.4 Why focus on adolescence?

Adolescence is a period in the human lifespan associated with massive and wide-ranging change for young people. Blakemore (2008) states that these changes take place throughout the adolescent years and encompass all aspects of life (e.g., physical and cognitive, along with social environment). Related to and facilitating this change process is an ongoing period of brain maturation. Grey matter and white matter composition transform at different rates throughout these years, with grey matter surging at the beginning of puberty, before being scaled back later in adolescence, while the myelination and fibre organisation associated with the expansion of white matter occurs later and at a more gradual pace. This contrast between patterns of change seen in grey and white matter has been implicated in discussions on the adolescent predilection towards risk-taking, with more rational thinking styles tending to come to the fore much later during this period (Konrad, Firk, & Uhlhaas, 2013).

Steinberg (2008) notes that the impact of puberty on mental health varies across gender and ethnic group lines, with females tending to be more vulnerable to negative effects than males. However, he also states that existing research indicates that most adolescents react positively to the biological changes they experience during puberty,

particularly those associated with the development of secondary sexual characteristics.

While many adolescents cope reasonably well with the changes and challenges facing them, some find these years more difficult and, for a variety of reasons, struggle to successfully overcome the obstacles they find themselves confronted with. As pointed out in the previous chapter, international studies indicate that up to one-in-five adolescents have a psychiatric disorder (e.g., Costello et al., 2011), while Lynch et al. (2006) reported similar findings among an Ireland-based secondary school population. Findings such as these suggest that while up to 80% of individuals may react positively to the changes that characterise adolescence, there is a significant minority who develop mental health issues during this time. Young people in this minority can find themselves vulnerable to a range of mental and behaviour-related problems, which can sometimes bring far-reaching consequences.

We will deal with adolescent self-harm and depression in depth in the next chapter, so will not linger too long on either area here. However, it is important to stress that adolescents are highly vulnerable to both, with females, in particular, more likely to engage in self-harming activities and experience depressive symptoms arising from distress and perceived difficulties in their day-to-day life. Adolescent females are also twice as likely as males to attempt suicide, but males are three-to-four times more likely to die by suicide (e.g., Beautrais, 2002).

In Ireland, the National Suicide Research Foundation (NSRF) publishes statistics annually on people who present at hospital Accident & Emergency units seeking

treatment arising from self-harming activities. The most recent National Registry of Deliberate Self-Harm (NSRF, 2013) document reported 12,210 distinct presentations by 9,483 individuals in the calendar year 2012. Adolescents and young adults figured prominently for both sexes. Overall, the rate was found to be 195 per 100,000 for males, with the first spike occurring in the 15-19 years bracket (368/100,000) and then peaking among those aged 20-24 years (533/100,000). For females, the rate was 228/100,000, peaking among those aged 15-19 years at 617/100,000. While the numbers have declined slightly since 2010, young people in Ireland and young females in particular appear to be vulnerable to levels of distress leading to self-harm.

With regard to young people and the prevalence of depression, it has been estimated that 11-12% of adolescents in the United States have experienced a major depressive episode on at least one occasion (Kessler et al., 2003). Thapar et al. (2012) reported that unipolar depressive disorder is a common health problem for adolescents throughout the world, offering a 4-5% estimate of one-year prevalence in mid-to-late adolescence.

Bridge, Goldstein, and Brent (2006) conducted a review of adolescent suicide and suicidal behaviour, noting that the incidence of young people ending their life had emerged as a significant global public health problem over the preceding 25 years. They reported findings suggesting that point prevalence of suicidal ideation among adolescents is 15-25%, ranging from general death-related thoughts and passive ideation to specific ideation with intent or planning. However, the authors stressed that the latter ideation is far less common, with annual incidence rates of 6% for females and 2.3% for males. Older adolescent females appear more likely to attempt

suicide, with this review reporting estimates ranging from 1.5-10.1% for females, as opposed to 1.3-3.8% for males throughout this period of life. However, it was also noted that it is difficult to source accurate figures for suicide attempts and that the true numbers may be higher, because many young people who attempt to end their own life will either not seek treatment post-event or the specifics of their case will be documented inaccurately when they present at a medical facility. The authors also make the point that it is not uncommon for the same individual to attempt suicide on more than one occasion, and that suicidal behaviour can be a flag for the possibility of eventual suicide completion. They reported findings to the effect that estimates of the risk of repetition range from 10% at six-month follow-up to 42% by 21-month follow-up, with a median 12-month recurrence rate of 5-15%. They also highlighted that individuals who have previously made an attempt will complete suicide at a rate of 0.5-1% per year, with these figures reported as being far higher than those seen in the general population. The authors also note that suicide rates increase markedly from childhood to adolescence, with males, as mentioned previously, tending to account for the vast majority. In seeking to account for the apparent suicide spike in adolescence, Bridge, Goldstein, and Brent (2006) point to research making the link with the greater prevalence of psychopathology in young people, stressing combinations of mood disorder and substance abuse, and that older adolescents have increased cognitive capabilities that lend themselves to planning and intent, much more so than younger victims of suicide.

In Ireland, the National Office of Suicide Prevention (NOSP) releases annual figures on suicide, with the most recent report (NOSP, 2013) confirming the established trend – both in Ireland and internationally - of relatively high rates among adolescents,

particularly males. Overall, males accounted for 82% (405) of suicides in Ireland in 2010, with the 20-24 years age cohort the most at-risk, averaging 31.9 suicides per 100,000, while 42% of male suicide victims were under 40. The first spike for males in the 2008-2010 period occurred in the 15-19 years age cohort, with 18.1/100,000.

Other recent publications specific to Ireland have highlighted mental health issues among young people in this country. Dooley and Fitzgerald (2012) conducted a national study of youth mental health, which was jointly published by University College Dublin and Headstrong, a national youth mental health research and advocacy group. Seventy-two secondary schools took part in the My World Survey-Second Level (MWS-SL), with 6,085 participants included in the analysis (mean age = 14.93, age range: 12-19 years, females = 51%). Also, 8,221 young adults (mean age = 20.35, age range: 17-25 years, females = 65%) from a number of settings (third-level education, training courses, unemployed, employed) completed the My World Survey-Post Second Level (MWS-PL). Several variables were assessed during the conduct of the study, including *inter alia* self-esteem, optimism, coping strategies, help seeking styles, life satisfaction, and depressive symptoms. It was found that the majority of young people who took part in the study were functioning well, but that where mental health issues were present, they tended to emerge in early adolescence, peaking in the late teenage years and early 20s. Also, Cannon, Coughlan, Clarke, Harley, and Kelleher (2013) reported findings from two epidemiological studies on mental disorders and psychopathology among community-based young people recruited in Leinster – the first study focusing on 11-13 year-olds (n = 1,131; males = 50.2%) while the second study involved individuals aged 19-24 years (n = 169; females = 53.8%). Participants were interviewed by trained clinicians and researchers,

and it was found that high numbers of young Irish people are experiencing mental ill-health at any time. The researchers found that by age 13, 33% of young people are likely to have experienced a mental disorder, increasing to 50% by age 24.

Self-harm, depression, attempted suicide, and completed suicide have emerged as serious problems among adolescents in Ireland and throughout the world. These trends highlight the potential benefits attached to actively seeking to enhance well-being by increasing positive emotions and reducing negative symptoms in an age cohort such as that being targeted in this research. Preventing mental disorders before their onset, as opposed to treating them when or if an individual comes to the attention of health services, can offer a potential lifelong advantage in terms of mental health (e.g., Jones, 2013). These are recurring conditions which can persist into the adult years and exist in co-morbidity with other disorders. There is evidence to the effect that increased well-being in of itself is a desirable outcome and can buttress individuals against life stresses and problems, leaving them better able to cope and thus more likely to sustain well-being in the long-term. Issues around this will be dealt with in depth in subsequent chapters, but for now, an example of what is being referred to here is the broaden-and-build theory of positive emotions (Fredrickson, 1998), which suggests that the experience of a wide variety of positive emotions broadens individual awareness, and encourages novel and varied forms of thought and action. It is envisaged that over time the experience of positive emotions also serves to build durable skills and resources, with this leading to better coping in challenging situations.

2.5 Brain scanning technology and cognitive development

There is increasing awareness of the complexities surrounding the process and duration of adolescence, with one of the main recent areas of focus being brain development. Until relatively recently, science was limited in terms of its ability to study healthy human brains. Giedd (2004) noted that even after the introduction of X-rays and CT scans, healthy adolescent brains could only be studied indirectly, because such techniques used ionizing radiation and were therefore ethically disqualified from use with healthy populations. However, the advent of magnetic resonance imaging (MRI) represented a breakthrough, as this technology offers accurate pictures of living brains, but without the use of radiation, facilitating what Giedd (2004) termed as “a new era of adolescent neuroscience” (p. 78). Using this technology, researchers have been able to look at brain anatomy through the teen years, with Giedd noting that in the United States a brain imaging project conducted by the Child Psychiatry Branch of the National Institute of Mental Health revealed dynamic changes in brain anatomy throughout adolescence. While the brain itself typically reaches 90% of its adult size by the age of six, and therefore remains relatively stable in size up to around age 20, the various subcomponents of the brain undergo massive, wide-ranging changes during the intervening period.

Using data accumulated during the course of the aforementioned longitudinal study, which required MRI scans and neuropsychological testing at two-year intervals, Giedd (2004) accessed 329 scans from 95 healthy young males and 66 healthy young females. One of the main findings related to the composition and development of white matter and grey matter in the adolescent brain. Giedd found that the amount of white matter in the brain tends to increase throughout the childhood years and

adolescence. This process of myelination of axons increases the speed of transmission between neurons. The enhanced neuronal processing associated with this is linked with the capacity for greater cognitive complexity and the ability to combine information from a number of different sources. Giedd's analysis found that the increases in white matter were generally linear, with the slope of increase being broadly the same in each of the four major lobes of the brain – frontal, temporal, parietal, and occipital. The corpus callosum (CC) hosts commissural myelinated axons, which connect similar parts of the brain across the left and right cerebral hemispheres.

In a review article, Lenroot and Giedd (2006) noted that while white matter increases in a broadly linear pattern, MRI data suggests that cortical grey matter develops along inverted U-shape lines, and with much more regional variation, i.e., volumes peaking at different times in different lobes. They pointed to findings showing that frontal lobe grey matter reaches its maximal volume in females at age 11 and 12.1 years for males, temporal lobe cortical grey matter peaks at 16.2 years among males and 16.7 years among females, while parietal lobe cortical grey matter reaches its max at age 10.2 for females and 11.8 years for males. In addition, the dorsal lateral prefrontal cortex (DLPFC), which has been identified as important for controlling impulses, is one of the last brain regions to fully mature, typically not reaching adult dimensions until the early-20s. Giedd (2004) emphasised the potential significance of the relatively late maturation of the DLPFC, stressing its role in inhibiting impulses, weighing up possible consequences of decisions, prioritising, and strategising. Given that this part of the brain is still developing up to a decade after the completion of puberty, Giedd

suggested this may be a factor in some of the negative behavioural manifestations associated with the teenage years (e.g., risk taking).

In a review of histological and brain imaging studies during puberty and adolescence, Blakemore and Choudhury (2006) noted that prior to the advent of MRI technology, knowledge of the workings of the adolescent brain was quite limited, but that subsequent research had provided evidence for the ongoing maturation of the frontal cortex during and beyond adolescence. They also stated that research in this area points to a steady increase in white matter in certain brain regions during childhood and adolescence, while the grey matter development is less clear-cut, sometimes progressive and at other times regressive, thus meriting the inverted U-shape description referred to earlier. The authors go on to state that brain maturity may only be reached many years after the nominal end of adolescence. They point to studies such as that by Sowell, Thompson, Tessner, and Toga (2001) which found that the pace of loss of grey matter in the frontal cortex associated with the process of brain maturation quickens during adulthood, from the early 20s up to age 30.

2.6 Adolescent risk-taking and brain science

Steinberg (2007) looked at risk taking in adolescence from the perspective of recent breakthroughs in brain and behavioural science. He asked why adolescents and young adults tend to take more risks than younger or older individuals, stressing that existing findings suggested that the tendency towards risky behaviour did not appear to be due to ignorance, irrationality, or beliefs in invulnerability, but instead, as highlighted by Reyna and Farley (2006), may relate more to the adolescent tendency to seek out and maximise immediate pleasure, with these related objectives sometime overriding

inclinations towards healthy behaviours when those behaviours are not compatible with the overarching pleasure-related goals.

Approaching the issue from a developmental neuroscience perspective, Steinberg (2007) points to the temporal lag between the onset of puberty and the rate at which the cognitive-control system matures. This approach maintains that puberty impels young people towards thrill-seeking and impulsivity, without the counterbalance of a strong cognitive-control system in place, making adolescence a time of particular vulnerability for risk-taking behaviours, with all the associated potential pitfalls that follow from that. He develops this view by pointing to advances in developmental neuroscience suggesting that the predilection towards risk taking in adolescence is the product of interaction between two brain networks – the socioemotional network and the cognitive-control network. This perspective has it that both networks exist in a state of competitive interaction, with this linked to a range of decision-making contexts and scenarios, including drug use, social decision processing, judgements around morality, and the assessment of rewards/costs in different situations. On this point, Chambers, Taylor, and Potenza (2003) identify adolescence as a critical time of vulnerability to addiction, highlighting neurodevelopment during this period as the key factor, predisposing young people towards experimentation-oriented behaviours. As with research referred to previously, this review identified links between brain maturation and individual motivation, impulsivity, and addiction. Set against the backdrop of changes in the frontal cortical and subcortical monoaminergic systems, Chambers et al. regard adolescent impulsivity as transitional trait behaviour. They state that the developmental processes involved may promote learning drives that

facilitate the transition into adulthood, but that these same processes also leave adolescents vulnerable to negative behaviours.

Steinberg (2007) outlines that the socioemotional network is highly sensitive to social and emotional stimuli, important for reward processing, and remodelled in early adolescence by the hormone changes associated with the onset of puberty. It is located in the limbic and paralimbic areas of the brain, an interior part of the organ which is quite old in evolutionary terms. By contrast, the cognitive-control network consists mainly of outer regions of the brain (suggesting that the socioemotional network predates the cognitive-control network), and subserves executive functions such as planning, thinking ahead, considering consequences, and regulation of the self. The cognitive-control network matures gradually from early- to late-adolescence and into young adulthood, with this process taking place mainly independent of puberty (e.g., Steinberg, 2004).

Steinberg (2007) also points out that the socioemotional network does not exert control over individual decision-making at all times. When young people are calm or not emotionally excited, the cognitive-control network will most likely prove strong enough to restrain impulsive behaviour; however, as the socioemotional network becomes more active (e.g., if a young person feels excitement), it becomes increasingly difficult for the cognitive-control network to hold sway. Against this backdrop, the author highlights the importance of peer groups, noting that risky behaviour is far less likely to take place in an individual context than in a group setting. He suggests that risk taking may be heightened during adolescence because young people spend a lot of time with their peers, and that the very presence of those

peers is sufficient to make the reward aspects of risky situations more compelling than when alone.

2.7 Neural imbalances in the developing brain

Konrad et al. (2013) describe adolescence as a period of neural imbalance, basing this statement on the relatively early maturation of the subcortical brain combined with the late maturation of prefrontal areas associated with control. As with Steinberg (2007), they stress that it is in emotional, stressful situations that this imbalance tends to make itself felt, with the more mature limbic and reward systems tending to overwhelm the still relatively immature prefrontal control system. As with Chambers et al. (2003), Konrad et al. ask what possible benefit may accrue to the individual from the temporary imbalance, given that it makes young people more likely to engage in risky behaviours and, therefore, expose themselves to potentially dangerous scenarios. In suggesting an answer to this question, they point to the inherent developmental tasks facing adolescents, stating that risky behaviour can be seen as the product of a biological disequilibrium between a tendency towards novelty-seeking and relatively immature self-regulatory capabilities. They propose that the purpose of the imbalance may be to facilitate adolescents in breaking away from the family security zone and in the creation of an independent identity. With this in mind, as also suggested by Chambers et al., it could be argued that the temporary imbalance in brain development may offer an evolutionary advantage, but the period in question remains one fraught with potential difficulties for the individuals involved.

Against this backdrop, Konrad et al. (2013) point to publications such as that of Crone and Dahl (2012), which suggest that immaturity of the prefrontal cortex tends to

favour certain types of learning and can facilitate flexibility. These authors point to ideas around adolescent risk-taking and the immaturity of frontal cortical neural systems, but insist that this does not tell the full story, instead highlighting evidence suggesting that changes in social and affective processing beginning at around the onset of puberty are also important, and that they come to the fore at this point in life to serve a potentially adaptive purpose. They highlight the importance for young people of developing the affective dimensions of motivation and goal-based learning. They single out the example of romantic relationships, and suggest that individual differences in kindness, honesty, and loyalty may have as much to do with how people feel about such values as with deliberately weighted decisions about the consequences of behaviour choices. With examples such as this in mind, they suggest it may be overly simplistic to regard the adult brain as the optimal functioning system and the differences apparent in the adolescent brain during its development as somehow indicative of deficits.

Konrad et al. (2013) also suggest that throughout the lifespan of any individual, “there are probably multiple developmental windows in which the brain is particularly well prepared for certain types of learning experience” (p. 429). Looking at adolescence through an evolutionary lens, they suggest that the cognitive style found at this juncture, which is extremely sensitive to social stimuli and flexible in terms of goal prioritisation, may be well suited to the particular social developmental challenges facing young people.

2.8 Neural plasticity

Recent research discoveries on the slow maturation of the brain also point to the opportunities associated with neural plasticity. Kadosh, Linden, and Lau (2013) refer to the potential around exploring the possibilities of changing brain-behaviour relationships on the basis of emotion processing, an area of cognition that is now believed to be constantly developing throughout the second decade of life. Awareness of this brain plasticity, they state, creates possibilities for identifying appropriate time windows for enhancing plasticity, thereby facilitating targeted interventions designed to take advantage of that opportunity.

Konrad et al. (2013) note similar possibilities, highlighting the potential long-term implications of brain plasticity during adolescence. They point to how environmental factors can influence this development, bringing with it “major, lasting effects on cortical circuitry” (p. 429). These authors stress the positive education-based opportunities that can arise from the knowledge that MRI research has provided us. It is also noted that while the adolescent tendency to be easily influenced by their emotions has been linked to risky behaviour, this also suggests that they could benefit from learning experiences delivered in the context of a positive emotional environment.

Of particular relevance to the current research, Giedd (2004), commenting upon the nature of the pruning phase associated with adolescent brain development, speaks in terms of a ‘use it or lose it’ hypothesis. According to this view, connections within the brain that are used during adolescence will survive and flourish, while those which are neglected will wither and fade away. As Giedd states: “If this hypothesis is correct,

the activities of the teen may have a powerful influence on the ultimate physical structure of the brain” (p.83). This, in turn, highlights possible opportunities associated with actively seeking to cultivate well-being and healthy, non-distorted patterns of cognition among young people. Laying down positive neural patterns while the brain is still developing may facilitate a context in which those patterns could take hold and become set in the fully developed, adult brain, with positive spin-offs for the individual in day-to-day life.

2.9 Long-term associations of mental health problems in adolescence

This point merits attention as there is a wide body of research which indicates that positive or negative experiences in adolescence are related to later outcomes in adult life. Jones (2013) highlights that as many as half of mental health disorders reported by adults can be traced back to adolescence. Kessler et al. (2007) conducted a review of relevant literature and reported that median age of onset for mental disorders extends from the late-teens into the early-20s, with approximately half of all lifetime mental disorders found to start by the mid-teenage years and three-quarters by the mid-20s, with secondary conditions accounting for the vast majority of later onsets. Findings such as these highlight the potential negative long-term implications associated with the vulnerability apparent in adolescence, with sensitivity to environmental factors combining with cognitive changes to create a space in which positive or negative life experiences can impact upon the still-developing brain. While there are dangers associated with this period, there are also opportunities. Just as mental health problems in youth can have life-long implications, it follows that if adolescents can negotiate this period in life without experiencing serious mental

health setbacks, they can emerge into adulthood better equipped to cope with the inevitable stresses and challenges that life will present to them.

Gregory et al. (2007) looked at data accumulated in the Dunedin Multidisciplinary Health and Development Study (DMHDS), with a view towards establishing patterns with regard to the juvenile mental health histories of adults with anxiety disorders. This ongoing longitudinal New Zealand-based study has tracked a cohort of 1,037 individuals at regular intervals since its inception in the early 1970s, when the participants were just three years old. Multiple mental health diagnoses in line with the standards of various editions of the DSM have formed part of the data accumulation process in the DMHDS. Gregory et al. (2007) analysed this data and found trends indicating that adult mental health problems could be traced back to adolescence. They reported that an overwhelming percentage of those who met diagnostic criteria at age 32 for an anxiety disorder in the previous 12 months had also done so at an earlier age, and that at least 50% had met DSM criteria for a psychiatric disorder by age 15.

Copeland, Shanahan, Costello, and Angold (2009) looked at to what extent childhood and adolescent psychiatric disorders predict young adult psychiatric disorders. In their research, they analysed 11 waves of data accumulated from the prospective population-based Great Smoky Mountains Study (GSMS) in the United States. As part of this longitudinal research, a base of 1,420 participants was assessed for common psychiatric disorders at three developmental moments – childhood (ages 9-12), adolescence (13-16), and young adulthood (19-21). Interestingly, and counter to the findings of much research with similar populations, the authors concluded that

what they termed as the putative link between adolescent and young adult depression was not supported. While they reported that adolescent depression significantly predicted young adult depression in the bivariate analysis, they found that the effect was accounted for by comorbidity of adolescent depression with adolescent oppositional defiant disorder, anxiety, and substance abuse disorders in adjusted analyses. However, while they questioned the direct link between adolescent and young adult depression, a key finding for the purposes of the current research is the continuity of mental health problems from adolescence into early adulthood, thus highlighting the need to look at prevention strategies as opposed to relying exclusively on treatment when young people with mental health issues come to the attention of health service providers.

Fergusson and Woodward (2002) looked at mental health, educational, and social role outcomes for adolescents diagnosed with depression. To do so, these researchers examined data gathered during a longitudinal study, the Christchurch Health and Development Study (CHDS), in New Zealand. This project took data from a birth cohort of 1,265 children born in mid-1977. Participants were studied at birth, four months, one year, at annual intervals up to age 16, again at 18, and at 21 years. Complete data was reported for 964 participants (76.2% of the initial group), and arising from this the authors found that young people who suffered from depression in adolescence were at significantly greater risk for a range of negative later outcomes, such as major depression, anxiety disorders, educational underachievement, attempted suicide, unemployment, and early parenthood. While these findings add further credibility to the suggestion that mental health problems in teenage years may have implications for later in life, it should be noted that there is no data reported here for

individuals aged over 21, a period when, as detailed previously, the human brain has not yet fully matured.

Fergusson, Horwood, Ridder, and Beautrais (2005) examined mental health outcomes in adulthood associated with subthreshold depression in adolescence, i.e., experiencing clinically relevant symptoms of major depression, but not meeting the full criteria for a formal diagnosis. The authors used data gathered during the conduct of the CHDS, with the sample in this study being made up of 1,006 young males and females assessed for depression at age 18 and on mental health-related outcomes at age 21 and 25. The percentage breakdown between males and females was not provided, but the number of participants represented 80% of the original cohort of 1,265 people, split along near-equal lines, 635 males and 630 females. Testing for associations between extent of depression in adolescence and later mental health, the authors classified initial ratings into asymptomatic, subthreshold, and major depression groups, and then tracked for each group reports on mental disorders and treatment-seeking at ages 18, 21, and 25. Examining patterns for depression, anxiety, and suicidal behaviour, they found significant relationships between the extent of depression at 17-18 years and later outcomes. Testing the dimensional model suggested by these results, they then applied tests of linearity to the data, and arising from that found evidence demonstrating significant linear trends between the extent of depression in adolescence and later outcomes. With a view towards allowing for potential confounding factors, they went on to fit generalised estimating equation models to the data. They found that significant associations between the extent of depression at 17-18 years and subsequent depression held up. All comparisons showed that individuals in the subthreshold and major depression groups had

significantly higher rates of later depression and treatment-seeking than those in the asymptomatic group. They concluded that participants with subthreshold depression in adolescence are an elevated risk group for later mental health difficulties.

Copeland et al. (2013) analysed three prospective, longitudinal studies – the CHDS, the GSMS, and the DMHDS – with a view towards developing insights on diagnostic transitions from childhood to adolescence and on to early adulthood. Patterns of diagnostic transitions were estimated using data sourced from the three studies, which gave the researchers access to assessments on individuals from age 9 to age 32. They found that having a mental disorder at a young age was associated with at least a threefold increase in vulnerability towards having such a disorder at a later period. The strongest links were found for behavioural disorders, with less evidence of continuity for emotional disorders. They concluded that having a mental health disorder in childhood was a major risk factor for a range of psychiatric problems at later points in development, and suggested that findings such as these offer support for prevention and early life intervention efforts.

Curry et al. (2011) looked at recovery and recurrence rates over a five-year period for 196 individuals (110 females, 86 males; average age: 18, age range: 14-22) in the United States who were treated for major depression in adolescence. For the purposes of this study, recovery was defined as the absence of clinically significant symptoms for major depressive disorder (MDD) as measured by the Schedule for Affective Disorders and Schizophrenia for School-Age Children-Present and Lifetime Version interview for a period of eight weeks, and recurrence was defined as a new episode of MDD following a period in which a participant had met the criteria for recovery. Of

the 189 participants who were deemed to have recovered, 88 (46.6%) experienced a recurrence of the condition, with females more likely to have additional episodes than males.

Jonsson et al. (2011) looked at patterns in intimate relationships and childbearing over a 15-year follow-up period among individuals in Sweden who had been diagnosed with depression during adolescence. The population-based investigation began when participants were 16-17 years old, and comparisons were made between adolescents diagnosed with depression ($n = 361$, 78% females) and non-depressed peers ($n = 248$, 77% females). The authors reported that at follow-up both groups had become parents to a similar extent, but that females who had experienced depression in adolescence were more likely to report abortion, miscarriage, intimate partner violence, and having contracted sexually transmitted diseases. This group also reported more intimate relationships than non-depressed peers, and were more likely to have gone through divorce and to be registered as single mothers. Females who were depressed and experienced a comorbid disruptive disorder were identified as being susceptible to especially poor outcomes, while among those who experienced depression during adolescence, only those who suffered recurrences in adulthood were more likely to experience poor outcomes.

Dunn and Goodyer (2006) conducted a longitudinal investigation looking at psychiatric outcomes in early adulthood for individuals experiencing childhood- and adolescence-onset depression. They drew participants from both clinical and community settings, working with 113 people (58 clinical and 25 community participants with depression, and 30 no-depression control participants) who had

taken part in previous research studies, aged 8-17, and were available for follow-up as young adults, after a mean intervening period of 7.8 years. The authors specified that follow-up interviews were scheduled as close to the 22nd birthday of participants as possible. Baseline assessments for clinical patients were made using the Schedule for Affective Disorders and Schizophrenia for School-Age Children (K-SADS) Present state, while community-based participants completed the K-SADS Present and Lifetime version. Follow-up assessments were conducted using the Structured Clinical Interview for DSM-IV Axis I Disorders (SCID-I), Patient Edition, while the authors also screened for antisocial and borderline personality disorder. At baseline, all participants completed the 33-item Mood and Feelings Questionnaire, while at follow-up they completed the Beck Depression Inventory. Mann-Whitney U-tests were used on non-parametric data and t-tests on parametric data, while remission-related data were analysed using Kaplan-Meier survival analysis. For clinical participants, Cox regression was used to examine the baseline factors thought to influence the time to both remission and first recurrence of depression. Baseline characteristics of the sample indicated that when compared to the community group, clinical group participants were more severely impaired, had higher rates of attempted suicide and self-harm, more psychotic symptoms, and were significantly younger at first onset. Self-report depression scores were similar between clinical and community groups, with both significantly higher than among control participants. At follow-up, 24 of the 30 (80%) control group members had remained illness-free, while this was the case for just 16 of 58 (28%) clinical patients and 10 of 25 (40%) community participants. Recurrent episodes of depression were experienced by 35% of the clinical group and 48% of the community group, while 22% and 8% respectively had experienced persistent depression since initial onset. Just four people (14%) in the

control group experienced an initial depressive episode. In the clinical group, men were more likely to be persistently depressed, whereas women were more likely to experience recurrent episodes.

Keenan-Miller, Hammen, and Brennan (2007) examined health outcomes in young adulthood associated with depression in early adolescence. This research involved 705 participants (342 males and 363 females) taking part in a study of depression among mothers and their children in Australia. Youth depression was assessed at age 15 using the Schedule for Affective Disorders and Schizophrenia for School-Age Children-Revised (Epidemiologic Version) (K-SADS-E), while the Structured Clinical Interview (SCI) was used at follow-up to assess diagnostic status from age 15-20. Health outcomes at age 20 were assessed using the UCLA Chronic Stress Interview and the SF-36 Health Survey. The authors analysed the data using hierarchical ordinary least-squares and logistic regression analyses. They found that, when controlling for covariates, diagnoses of depression by age 15 significantly predicted health status at age 20, while chronic illness by age 5 and depression at age 20 both significantly predicted self-perceived health, and depression by age 15 also significantly predicted perceptions of general health. Based on their findings, the authors concluded that both objectively rated and self-rated general health during the transition from adolescence into early adulthood may be adversely affected among individuals who have experienced depressive disorders, though it was stressed that depression by age 15 in of itself was not a predictor of physical functioning or reported chronic disease status. However, they also made a point of stating that their findings offered support to the hypothesis that depression in adolescence is associated with medical and social costs in early adulthood.

2.10 Summary

Teenagers (ages 10-19) account for more than 16% of the global population – 1.2 billion of 7.2 billion, according to official figures for 2010. With the UN (2013) projecting that the global population will reach 9.6 billion by 2050 and 10.9 billion by 2100, even if the percentage of teenagers in the world remains static or falls slightly, absolute numbers are set to increase in the coming decades. In the Republic of Ireland, the most recent CSO data (2013) shows that in 2011 there were almost 600,000 teenagers living in the country, 12.76% of the total population. Before any other factors are considered, research into the adolescent experience can be justified in terms of numbers alone.

The WHO (2012) offers a definition of adolescence as being between 10 and 19 years, but recognises the imprecise nature of this period in the lifespan by also defining youth as being between 15 and 24 years, while individuals between 10 and 24 are described as young people. Steinberg (2008) highlights the tendency among social scientists to speak in terms of early adolescence (approximately ages 10-13), middle adolescence (14-17), and late adolescence (18-21). In the current research, the overwhelming majority of participants, drawn from a schools-based population, were aged 15-16 years, falling into line with the broad definition of mid-adolescence.

Adolescence is a period associated with massive and wide-ranging changes.

Blakemore (2008) highlights that these changes impact every aspect of life, with physical and cognitive transformations accompanied by alterations in the social environment. Steinberg (2008) notes that most adolescents react well to the biological changes they experience, but that females tend to be more vulnerable to mental health

problems following the onset of puberty. Even though most cope well, many adolescents struggle with the challenges associated with this time, and this period is widely regarded as one of vulnerability for a range of mental health and behaviour-related problems. The NSRF (2013) has highlighted the extent of self-harming activities occurring in Ireland on an annual basis, with females aged 15-19 years the most at-risk group. Also in Ireland, the NOSP (2013) has highlighted how males are more likely to commit suicide than females, accounting for 82% of those who died in this manner in 2010, with males aged 20-24 most at-risk.

Recent advances in brain scanning technology have facilitated breakthroughs in the study of the adolescent brain. Giedd (2004) notes that while the brain tends to reach 90% of its adult size by age 6, its various subcomponents undergo major changes up to around the age of 20. Giedd found that the amount of white matter in the brain tends to increase throughout childhood and adolescence. This process of myelination of axons increases the speed of transmission between neurons, and has been linked with the capacity for greater cognitive flexibility. Lenroot and Giedd (2006) highlight that cortical grey matter develops along inverted U-shape lines, and with much more regional variation, i.e., volumes peaking at different times in different lobes. Also, the DLPFC, which has been identified as important for controlling impulses, is one of the last brain regions to fully mature, typically not reaching adult dimensions until the early-20s.

Steinberg (2007) links the tendency for adolescents to engage in risky behaviours with the rate at which individual cognitive-control systems mature. This view suggests that puberty impels young people towards thrill-seeking and impulsivity, without the

counterbalance of a strong cognitive-control system, with this deficit most apparent when a young person's socioemotional network is at its most active (e.g., when excited). The cognitive-control network matures gradually from early- to late-adolescence and into young adulthood.

Konrad et al. (2013) describe adolescence as a period of neural imbalance, pointing to the relatively early maturation of the subcortical brain compared to that of the prefrontal areas, with the latter associated with individual control. As with Steinberg (2007), they stress that it is in emotional, stressful situations that the imbalance will exert its influence, with the more mature limbic and reward systems tending to overwhelm the still relatively immature prefrontal control system.

The slow maturation of the brain also suggests possibilities associated with neural plasticity. Kadosh et al. (2013) look at how to explore changing brain-behaviour relationships on the basis of emotion processing, an area of cognition believed to be constantly developing throughout the teenage years. They state that this creates the possibility of identifying appropriate time windows for enhancing plasticity, thereby facilitating targeted interventions designed to take advantage of that opportunity. This relates to the 'use it or lose it' hypothesis articulated by Giedd (2004), whereby connections within the brain that are used during the adolescent period will flourish, while those which are neglected will fade. Giedd suggests that if this theory is correct, then activities undertaken during adolescence can impact on the final physical structure of the brain. This point highlights possibilities around seeking to cultivate well-being and healthy patterns of cognition. Laying down positive neural patterns

while the brain is still developing may facilitate those patterns in taking hold and becoming set in the fully developed, adult brain.

Jones (2013) highlights that half of mental health disorders reported by adults can be traced back to adolescence, while Kessler et al. (2007) reported that the median age of onset for mental disorders stretches from the late-teenage years into the early-20s, with approximately half of all lifetime mental disorders starting by the mid-teens and three-quarters by the mid-20s. These findings highlight the potential long-term, adverse consequences of mental health problems in youth, while at the same time underscoring the desirability of seeking to prevent problems rather than just looking to treat them when they are diagnosed.

3. DEPRESSION

While depression was referred to in Chapter 2 specifically in the context of long-term associations with mental health problems in adolescence, here we will deal with it as a relevant topic in its own right.

3.1 Trajectories of depression in society

Depression is one of the most widely-reported forms of psychological distress experienced in western societies (McLaughlin, 2011). It has become so widespread in recent decades that the World Health Organisation (WHO, 2008) identified unipolar depressive disorders (also known as Major Depressive Disorders; MDDs) as the third most common leading cause of burden of disease throughout the world. Measuring the impact of individual diseases and conditions in terms of disability-adjusted life years (DALYs), figures extrapolated for 2004 suggested that unipolar depressive disorders were responsible for 65.5 million DALYs, 4.3% of the overall total. This statistic saw depression rank behind only lower respiratory infections (6.2%) and diarrhoeal diseases (4.8%) in the rankings. The same publication projects that while global DALYs will decrease from 1.53 billion to 1.36 billion by 2030, depression will become the single leading cause of burden of disease by that time, accounting for 6.2% of the overall total.

3.2 What is depression?

The DSM-IV-TR (APA, 2000) characterises depression as belonging to the Mood Disorders category for diagnostic purposes, in that it identifies disturbance of mood as a predominant feature of the condition. The manual draws a distinction between an individual experiencing Major Depressive Episode (MDE) and one experiencing

MDD. MDE is listed separately, but it is stressed that it cannot be diagnosed as a separate entity. Instead, depressive and other mood episodes are regarded as building blocks for the full disorder diagnoses.

Depression questionnaires seek to gather measureable data on a range of symptoms, and the relevant scoring systems tend to operate cut-off points, suggesting whether a participant is low in depressive symptoms or, in the event of high scores, should be considered for further assessment. Taken in isolation, a high score in a self-report depression scale would not necessarily indicate that an individual is suffering from some form of depression. More correctly, without compromising anonymity if that is a consideration, a researcher would make any such scores or a trend in such scores (e.g., if working with adolescents) known to the relevant authorities, with a recommendation that the situation be monitored or further assessed.

The Depressive Disorders as per the DSM-IV-TR are MDD, Dysthymic Disorder (DD), and Depressive Disorder Not Otherwise Specified (DDNOS). MDD is characterised by one or more MDEs, which, for the purposes of diagnosis, demands at least two weeks of depressed mood or loss of interest, along with at least four other symptoms of depression, drawn from a list including the following:

- Fatigue or loss of energy,
- Recurrent suicidal ideation,
- Insomnia or hypersomnia,
- Significant weight loss or gain,
- Depressed mood,

- Loss of interest in day-to-day activities,
- Feelings of worthlessness or excessive guilt.

DD requires at least two years in which an individual experiences a depressed mood more days than not, along with additional depressive symptoms that do not meet the criteria set out for MDE. DDNOS is included for the purposes of dealing with disorders which have depressive features, but do not meet the criteria necessary to be assigned to more specific headings.

The DSM-IV-TR stresses that the essential feature of MDE is at least two weeks in which an individual experiences either depressed mood or loss of interest or pleasure in a wide range of activities, though it is also noted that for children and adolescents the mood experienced may be irritability rather than sadness. To justify the diagnosis, an episode must also be accompanied by what is termed “clinically significant distress or impairment in social, occupational, or other important areas of functioning” (APA, p. 349, 2000). Sleep disturbance is also a feature, though the specific type of disturbance can vary. Insomnia is most commonly reported, with different individuals reporting the middle (waking up during the night and finding it difficult to fall asleep again), terminal (waking too early and not being able to fall asleep again) or initial (difficulty falling asleep) types (e.g., Baglioni et al, 2011). Also characteristic of MDE is a sense of worthlessness or guilt, which can take the form of unrealistic negative self-evaluations or excessive ruminations over minor past failings (e.g., Thomas et al., 2011). There can also be thoughts of death, suicidal ideation, or actual suicide attempts (e.g., Pace & Zappulla, 2010), while in children a sharp decline in

academic performance may reflect poor levels of concentration, which can also be associated with this condition (e.g., Khalil et al., 2010).

According to the DSM-IV-TR, the core symptoms of MDE are the same for children and adolescents, though it is noted that the prominence of characteristic symptoms can vary depending upon age. Elaborating on this, the manual states that somatic complaints (e.g., cardiac arrhythmias and gastrointestinal pain), irritability, and social withdrawal are more commonly seen in children, whereas psychomotor retardation, hypersomnia, and delusions are more frequently associated with adolescents and adults. Also, women are far more likely to develop MDEs at some point in their lives than men. The divergence between the sexes first appears during adolescence, with the onset of puberty suggested as a key moment. Studies indicate that women are far more likely to experience an MDE than men, with the difference between the sexes observed as initially manifesting in mid-puberty and persisting from that point throughout life (e.g., Piccinelli & Wilkinson, 2000). This gap crosses national borders, with Van de Velde, Bracke, and Levecque (2010) conducting research in 23 European countries, and finding women reporting higher levels of depression in all. However, there were national differences observed, with the gap most pronounced in eastern and southern European countries, and smallest in Nordic countries, Slovakia, and Ireland.

The essential feature of MDD is a clinical course characterised by one or more MDEs without a history of Manic, Mixed, or Hypomanic Episodes. Hypomanic in this context refers to a similar type of episode as seen with Manic, but the impairment involved is usually not so severe as to require time off work and psychotic features

are not present. As mentioned earlier, five or more symptoms must be present within a two-week period, one of which, when dealing with children, must be depressed mood or irritability. Also, prior to any diagnosis being made it is necessary to establish that whatever symptoms being displayed are not better explained by a recent bereavement, a medical condition, or substance abuse.

3.3 Prognosis for depression

The DSM-IV-TR states that the prognosis for sufferers of depression is quite good (APA, 2000). Untreated episodes tend to last for at least four months, but a majority of cases see a full remission of symptoms. Carr (2006) maintains that the outcome trajectories for individuals diagnosed in childhood and adolescence tends not to be favourable, and Cuijpers, Beekman, and Reynolds III (2012) state that more than half of those diagnosed with depression will develop a recurrent or chronic disorder after the initial depressive episode and may go on to spend more than 20% of their life actively depressed. R. Park and Goodyer (2000) highlight that the average duration of an MDE in young people who have been clinically referred is seven to nine months, while 12 months on from onset 70-80% of those diagnosed will have recovered, but one in every 10 child and adolescent who experiences an MDE will remain persistently depressed. They add that relapse is common, tending to occur within two months in 40-60% of cases involving young people, and while short-term recovery is the norm, the majority of those affected will go on to experience future depressive episodes.

3.4 Subthreshold depression

Some symptoms deemed insufficient to meet the full criteria for MDD may persist for months or years, and can be associated with some disability or distress experienced by the individual in question during that period. Individuals in this situation are said to be suffering from subthreshold depression (SD). This condition, referred to briefly in the previous chapter, sees individuals report depressive symptoms, but not to the extent that they are judged to merit a diagnosis of MDD. Cuijpers, Smit, and van Straten (2007) conducted a meta-analysis of SD treatments, in which they noted that depression of this type can have a major adverse impact on quality of life and is highly prevalent. They stated that community studies using the DSM-IV criteria for minor depression show prevalence rates ranging from 5-10%, but that these rates increase markedly when SD is defined as scoring above a cut-off point in self-report scales.

Analysing data accumulated during the course of a study of 591 community-based young adults in Switzerland (data collected at several intervals from 1978 to 1993, with participants aged 18-19 initially), Angst and Merikangas (1997) found that longitudinal prevalence rates for SD were quite high, with various forms accounting for 29.5% of the overall sample, compared with 17.8% for what the researchers termed as threshold depression conditions (MDD and dysthymia).

Cuijpers and Smit (2004) conducted a systematic review addressing SD as a risk indicator for MDD. They analysed 20 studies (three of which identified two categories of SD, meaning that among all studies there was a total of 23 comparisons with control groups), including 43,198 participants, of which 6,049 were described as

having SD. These studies fell into three categories: community samples (10 studies), general medical patients (seven studies), and studies of high-risk groups (three studies). They noted that the studies differed in terms of how SD was operationalised, the follow-up period, composition of comparison groups, and measures of MDD. Calculating incident rate ratios, they found that in 16 of the 23 comparisons - 11 community samples, three medical patient studies, and two of the high-risk studies - the presence of SD constituted a significant relative risk of developing MDD.

As detailed in the previous chapter, Fergusson et al. (2005) looked at SD in general community adolescents (ages 17 and 18) in New Zealand and mental health outcomes in adulthood (up to age 25). They found that participants with SD during adolescence exhibited elevated risk for later depression or suicidal behaviours.

Wesselhoeft, Sorensen, Heiervang, and Bilenberg (2013) conducted a systematic review of SD in children and adolescents. Considering 24 studies, they stressed that while diagnostic criteria for SD varied, they noted similarities with MDD, highlighting that both were common conditions and had similar risk factor patterns. They acknowledged that SD is milder than MDD, but stressed that as well as being associated with negative outcomes in its own right, it can also be a precursor to MDD. The authors noted a public health need for strategies geared towards preventing early SD from developing over time into MDD.

Findings such as these highlight the continuum aspect of depression, but also draw attention to the fact that the presence of depressive symptoms without necessarily meriting a diagnosis of major depression can still have negative consequences later in

life. This, in turn, broadens the pool of at-risk individuals for mental problems in adult life beyond those who earn the specific diagnosis during adolescence. It also highlights the ‘under the radar’ element, in that young people experiencing distress can move through adolescence without being identified and receiving assistance.

3.5 Outcomes associated with depression in early adolescence

Keenan-Miller et al. (2007) conducted a longitudinal study in the United States in which 705 adolescents (342 males and 363 females) at varying levels of risk due to maternal depression were assessed for a history of depression at age 15, depressive disorders at age 20, and a range of health outcomes, also at age 20. The authors found that even when controlling for the effects of concurrent depression at age 20, early adolescent depression, when assessed by an interviewer, continued to be associated with poorer health, poorer self-perceived general health, more health care interaction, and increased work impairment. They concluded that experiencing depression in early adolescence brings adverse consequences for health and associated costs during early adulthood. Kessler (2012) conducted a review of research into the societal costs of MDD, and found that early onset was a predictor for a number of subsequent difficulties, including 60% increased risk of failing to complete second level education relative to other youths in high income countries. Kessler also reported that early onset mental disorders predict a low probability of ever marrying, but can be associated with marrying before the age of 18. Early marriage has been linked to negative outcomes, with, for example, Gotlib, Lewinsohn, and Seeley (1998) finding that depression in adolescence predicted marrying at a younger age for females and subsequent marital dissatisfaction. Kessler also highlighted that pre-marital history of

experiencing mental disorders has been identified as a predictor of divorce for both males and females, with MDD prominent among those disorders reported.

Evidence in the existing literature suggests that while adolescents can recover from a specific episode, they do not grow out of their mood disorder. Instead, major depression tends to be a recurring condition, and individuals who experience depression in youth are more likely to do so again in adulthood than counterparts who go through childhood and adolescence without experiencing depression (R. Park & Goodyer, 2000).

3.6 Prevalence of depression

In the United States, the various forms of depression have become so widespread that available evidence points to it being the most common mental disorder experienced in that country. The extent of the problem has been deemed so serious that it has been referred to as an “epidemic” (Seligman, p.10, 2006). However, Costello, Erkanli, and Angold (2006) counselled against the accuracy of this description, at least as it relates to depression in childhood and adolescence. They conducted a meta-analysis of 26 epidemiologic studies, which recorded 59,703 observations on children born between 1965 and 1996, with four main inclusion criteria – participants aged up to 18 years, formal psychiatric diagnoses of depressive orders were present (studies using only symptom questionnaires were excluded), key participant information was available (date of birth, sex, and age at time of interview), and information was provided on the time-frame of diagnostic interviews conducted. Fifteen datasets offered information on children under 13 years and 20 datasets dealt with participants aged 13-18, while a further 34 datasets dealt with males and females separately (16 for males, 18 for females). Using fixed-effects linear regression models, no evidence of increasing rates

of depression among later-born participants was found. As the authors expected, the model showed higher rates of depression in adolescence than in childhood, and in adolescent females over adolescent males throughout the three decades covered by the studies. Based on their findings, they concluded that while contemporary concerns about depression rates among children and adolescents are justified, the latter day perception of an epidemic may be owed to higher awareness of a condition that was previously under-diagnosed by clinicians rather than greater prevalence.

However, Seligman, Ernst, Gillham, Reivich, and Linkins (2009) point out that whether researchers provide evidence suggesting that depression has become far more prevalent in the last 50 years or whether such findings reflect increased awareness of this issue or memory biases in recall, there is near unanimity on the observation that depression is widespread and in many instances goes untreated. On a similar note, Kieling et al. (2011) highlight that the mental health needs of children and adolescents are often neglected, particularly in low-income and middle-income countries, while Belfer (2008) states that mental health problems, including depression, afflict 10-20% of young people throughout the world. Belfer emphasises the point, also made in the previous chapter, that up to 50% of all adult mental disorders can be traced back to initial onsets in adolescence.

The Centers for Disease Control and Prevention (CDCP) published an analysis of pre-existing survey data with a view towards estimating the prevalence of current depression in the United States (Gonzalez et al., 2010). They found that based on this data, almost one in 10 US adults reported experiencing some form of depression. This analysis looked at data provided by 235,067 adults in 45 of the 50 states. While minor

statistical errors were found in the initial analysis, a subsequently published erratum (2011) confirmed the substance of the findings, with 9.1% of those sampled meeting the criteria for current depression (i.e., reporting significant symptoms in the two weeks preceding the survey), with 4.1% of the overall participant group meeting the criteria for major depression, just over one in every 25 people.

Kessler, Petukhova, Sampson, Zaslavsky, and Wittchen (2012) presented estimates of 12-month and lifetime prevalence and of lifetime morbid risk (LMR) within the United States as based on epidemiological surveys conducted among people of age 13 and upwards. MDE was found to be the most common mental health issue among those sampled, with LMR and 12-month prevalence frequencies found to be 29.9% and 8.6% respectively. It was also found that major depression was the most common lifetime anxiety-mood disorder reported in the United States, with a prevalence rate of 16.6% and LMR of 29.9%, while depression was found to have a median onset in young adulthood (age 23-30).

Other national surveys have produced estimates suggesting that approximately 16-17% of adults and 11-12% of adolescents in the United States have experienced an MDE on at least one occasion (Kessler et al., 2003). Also, it has been suggested that severe depression may be 10 times more prevalent than in the middle of the last century (Seligman, 2006), while the transition from childhood to adolescence has been identified as a point during which individuals show vulnerability towards depressive symptoms. Maughan, Collishaw, and Stringaris (2013) note that as recently as three decades ago, depression was widely regarded as being almost exclusively an adult disorder, with this position predicated upon the view that

adolescents lacked the developmental maturity to experience it, and that low moods associated with the teenage years were an expression of mood swings in-keeping with the norm for that period in life. They also note the importance of developmental studies in modifying such views to the point that few now question the reality of the existence of child and adolescent depressive disorders.

As mentioned previously, Thapar et al. (2012) note that unipolar depressive disorder is a common health problem among adolescents throughout the world, and point to estimates of 4-5% one-year prevalence in mid- to late-adolescence. These authors also highlight that not only can adolescents experience depressive disorders, but that those who do are more likely to experience a range of negative outcomes later in life, including greater vulnerability to anxiety disorders, bipolar disorder, suicidal behaviour, and physical health problems.

In Europe, the European College of Neuropsychopharmacology (ECNP) and European Brain Council (EBC) recently collaborated on a report detailing the size and burden of mental disorders in the 27 European Union (EU) member states and adjacent countries Iceland, Norway, and Switzerland (Wittchen, et al., 2011). Using a stepwise multi-method approach – comprising systematic literature reviews, analysis of previously gathered data, national surveys, and consultations with experts - this three-year study found that more than one-third of the population in those 30 countries suffers from a mental disorder in any given calendar year. Depression ranked third on the list, accounting for 6.9% of the total. The researchers extrapolated from their findings that 164.8 million people in the countries examined suffer to varying degrees with mental disorders. They arrived at this figure after making

adjustments for age and comorbidity. Looking at the major depression percentages in the context of these figures suggests that more than 11.3 million individuals in the EU and neighbouring countries may currently be experiencing the condition. The authors concluded that tackling mental health disorders will constitute the core health challenge facing European countries in the 21st century. Further, they pointed to evidence that the majority of people afflicted with mental disorders experienced their initial onset in childhood or adolescence, rarely improve without external intervention, and from the time of first experiencing difficulties related to their mental health are far more vulnerable to secondary disorders than individuals who go through adolescence without experiencing a mental disorder.

In Ireland, Barry et al. (2009) conducted a survey into mental health and social well-being for the Department of Health and Children. The survey saw more than 10,000 individuals over the age of 18 take part in face-to-face interviews, and arising from this it was reported that 6% of all respondents were classified as having MDD, which the authors noted was broadly in line with the European rate. It was found that women are more likely to have MDD than men, with the most vulnerable being females in lower social class groups, and aged 18-29 and 45-64. This report also highlights the connection between self-harm and depression, pointing to existing research which shows that depression and anxiety disorders are risk factors for suicide and self-harm (Haw, Hawton, Houston, & Townsend, 2001). `

3.7 Depression, self-harm, and suicide

Harrington (2001) conducted a review in which he examined the relationship between depression, self-harm, and suicide among adolescents. He stressed that while the

causes of depression itself are likely to be multi-factorial – with genetic and environmental influences – research in the United States had identified trends which indicate increased rates of completed suicide among depressed adolescents. He added that triggers of suicide also tend to be multi-factorial, with stressful events and social milieu (e.g., media coverage, role models in the community) among the elements which come together to inhibit or facilitate, but that depressive disorder is one of the most significant predisposing factors among adolescents. Examining the differences between those who attempt suicide and those who complete it, Harrington pointed to a number of distinguishing factors, including that completers are “more likely to be male, plan their attempts, use more dangerous methods and suffer from persistent mental disorders such as depression” (p. 55).

Addressing self-harm, Harrington (2001) stated that, while it is usually triggered by life stress, research also indicates that individuals who engage in these activities have high rates of depressive symptoms, though they tend not to have sustained depressive disorders.

In Ireland, the National Suicide Research Foundation’s most recent National Registry of Deliberate Self-Harm (NSRF, 2013) reported 12,210 distinct presentations at medical facilities involving 9,483 individuals. Overall, the rate was found to be 195 per 100,000 for males, with the first spike occurring in the 15-19 years bracket (368/100,000) and then peaking in the 20-24 age group (533/100,000). For females, the rate was 228/100,000, peaking among those aged 15-19 years at 617/100,000. These figures suggest that one in every 162 females aged 15-19 and one in every 188 males aged 20-24 presented to hospital during the calendar year 2012 arising from

acts of deliberate self-harm. This most recent report notes that the 2012 figures mark the second consecutive year in which the overall numbers have declined – 2011 figures were down 4% on 2010, while 2012 was down 2% on the previous year. However, it was also highlighted that the 2012 figures were still 12% higher than those recorded in 2007, with the years 2008 (+6%), 2009 (+5%), and 2010 (+7%) all having seen large increases in deliberate self-harm-related hospital presentations. It was also noted that while the established trend of females being more likely to engage in acts of deliberate self-harm has continued, the gap between rates for males and females has narrowed considerably in recent years – from 37% in 2004-2005 to 17% in 2012. The NSRF report notes that the post-2007 upward trend in self-harming activities coincided with the economic recession in Ireland. These figures suggest that self-harm is a serious issue among young Irish people, particularly females, but also increasingly so for males.

In its most recent report, the National Office for Suicide Prevention (NOSP, 2013) found that there are relatively high rates of suicide in Ireland among adolescents, particularly males. Figures highlighted in the report revealed that there were 495 deaths by suicide in Ireland in 2010 – with males accounting for 405 (82%). The report noted that this sex-related pattern has been a constant feature of death by suicide statistics in Ireland during the preceding decade. The most at-risk age cohort in 2010 was males aged 20-24, with 31.9 suicides per 100,000, while 42% of males who ended their own lives that year were under the age of 40.

Calculating suicides as three-year moving averages, the report showed that, for the 2008-2010 period, the first spike in male suicide figures occurs in the 15-19 age

group, with 18.1/100,000 (the 10-14 years category shows 1.6/100,000 for the same period), while the corresponding figure for those aged 20-24 is 25.8/100,000 with this increasing again for the 25-29 years group, reaching 26.2/100,000. Female suicide figures remain lower than those for males across all age groups. While the highest moving average figures are in the 45-49 and 60-64 age groups, the report notes that the greatest increase from 2001-2003 to 2008-2010 occurred in the 15-19 years age group, moving from 3.9/100,000 to 6.5/100,000. This figure then dips to 3.7/100,000 for females aged 20-24, with the rate among teenagers only exceeded among females over 40.

3.8 Theories of depression

Several theories relating to causes of depression have been proposed over the years. Among these theories are biological, psychoanalytic, behavioural, and cognitive models.

3.8.1 Biological models

Biological theories investigating the causes of depression emphasise genetic and neurochemical components. This approach highlights the importance of family history, and considers the possibility that a predisposition towards being vulnerable to depressive symptoms is heritable, i.e., passed down through generations. Researchers looking at the genetic component rely mainly upon twin, adoption, and family studies.

In a review of the previous 10 years of research, Birmaher et al. (1996) noted that based on family aggregation studies the children of parents with depression are three times more likely to experience an episode of MDD, while the lifetime risk in

children of parents with depression was estimated in different studies to range from 15-45%. They added that children appear to be at highest risk for MDD if their parents experienced early onset and recurrence of depression, while risk also increases when both parents have mood disorders. The authors noted that such findings indicate that a vulnerability to depression can be inherited, but that a certain set of environmental circumstances may be required for MDD to manifest. On this point, Birmaher et al. suggested that the evidence accumulated in twin and adoption studies suggested that “genetic factors account for at least 50% of the variance in the transmission of mood disorders” (p. 1431), but also stressed that literature highlights the importance of environmental factors.

Kendler and Karkowski-Shuman (1997) examined whether genetic vulnerability to MDD might influence people to place themselves in environments where they would be more likely to experience stressful events. Using discrete time survival analysis in a population-based sample of 2,164 United States-based female twins, the authors examined whether the risks for a range of stressful life events were predicted by levels of genetic vulnerability to MDD. They found that genetic vulnerability was associated with a significantly increased risk for six personal stressful life events – assault, serious marital problems, divorce/marital breakdown, job loss, serious illness, and major financial problems. The authors concluded that possessing genetic risk factors for MDD increases the likelihood of experiencing stressful life events in interpersonal and occupational/financial spheres. They also speculated that genes can impact on vulnerability to psychiatric illness by influencing behaviour which sees individuals place themselves in high risk environments.

Rice, Harold, and Thapar (2002) conducted a review of evidence for the role that familiarity plays in MDD and the genetic aetiology of depressive symptoms in young people. They looked at family, twin, and adoption studies that met specific inclusion criteria (distinction between unipolar and bipolar depression, systematic recruitment of participants and relatives, systematic recruitment of a control group, and use of operationalised criteria). Using these terms of reference, they eventually included four independent top-down studies (i.e., with offspring of parents with MDD) and six bottom-up studies (i.e., with relatives of child probands with MDD) in a meta-analysis. When looking at the family studies, they found that the estimates of familial risk varied depending upon the nature of the control group used. They found that, when compared with normal control groups, top-down studies indicated an almost four-fold increase in depression risk among first-degree relatives and a two-fold increase in bottom-up studies. In studies where there was a psychiatric or medical control group, it was found that the risk was two-fold, though it was noted that not all top-down studies used control groups of this type. They concluded that there was consistent evidence contained both in family studies and the analysis of pooled data that MDD in young people is familial in nature. They also stressed that it was noteworthy for researchers interested in molecular genetic studies that follow-ups have shown that child and adolescent MDD cases tend to continue into adulthood.

Glowinski, Madden, Bucholz, Lynskey, and Heath (2003) looked at the heritability of youth MDD in an epidemiologically and genetically representative sample of United States-based adolescent female twins. Data from 3,416 participants (mean age: 15.5 years, range: 12 to 23 years) was sourced through the Missouri Adolescent Female Twin Study, a research project looking at alcohol problems and psychiatric disorders.

Participants were assessed through a telephone adaptation of the Child Semi-Structured Assessment for the Genetics of Alcoholism, with MDD diagnosis based on the DSM-IV and assessed on responses given to a 30-item section on depression. The authors stated that lifetime self-reported MDD prevalence ranged from 1% for participants aged 12 to 17.4% for those aged 19 and older, while the genetic variance in risk was 40.4%, with non-shared environmental effects accounting for the remainder. The authors regarded the genetic variance as being modest, but significant.

Liang and Eley (2005) conducted a monozygotic (identical) twin study looking at the influence of non-shared environmental factors on adolescent depressive symptoms. This two-wave study included 1,185 twin pairs (328 of which were monozygotic), with an age range of 12 to 19 years. Adolescent depressive symptoms were measured on both occasions using the Moods and Feelings Questionnaire, negative life events were assessed using the Life Event Scale for Adolescents, while parent attitudes to discipline and compromise were also assessed, as were peer group characteristics, while twin differences were measured by assigning each twin pair as Twin 1 or Twin 2, then subtracting Twin 2's total score on each composite measure from that of Twin 1. Data were analysed using a series of univariate and multivariate linear regression analyses. The authors reported that increased punitive discipline and negative life events emerged as relevant non-shared environmental factors that followed depression, but that only negative life events had a direct non-shared environmental association with concurrent depressive symptoms independent of previous symptoms, as well as all other variables considered in the study.

Kendler, Gatz, Gardner, and Pedersen (2006) examined the heritability of MDD among a Swedish sample of 42,161 twins born between 1886 and 1958, with the youngest aged 42 at time of screening. Participants were assessed using the computerised Composite International Diagnostic Interview Short Form (CIDI-SF), adapted from its original design for 12-month prevalence to the assessment of lifetime prevalence. Analysing the data using model fitting, they found that heritability of liability to MDD was significantly higher among females – 42%, as opposed to 29% for males – while genetic risk factors were moderately correlated in both. They concluded that lifetime MDD was moderately heritable, and that their results were broadly in line with those reported by prior similar studies.

At the neurochemical level, the monoamine hypothesis, first expressed in the mid-1960s, suggests that depression may arise from an imbalance in or decreased levels of noradrenaline or serotonin in the brain (e.g., Mulinari, 2012). This theory took hold based on findings to the effect that many anti-depressant medications increased synaptic concentrations of noradrenaline or serotonin, and also that the catecholamine-depleting medication reserpine had the ability to facilitate depression-like symptoms (Wong & Licino, 2001). However, it has also been noted that the monoamine hypothesis does not answer all questions related to causes of depression, and possesses many limitations. Wong and Licino, in a review article on research and treatment approaches to depression, noted how studies have shown that in certain circumstances increased noradrenaline output is present in cases of depression, and also that medications targeting the relevant neurotransmitter systems affect monoamines within hours, but a full explanation has yet to be offered for why

antidepressant effects tend not to be reported until several weeks of daily treatment have taken place.

Krishnan and Nestler (2010) highlighted that while MDD is a heritable neuropsychiatric syndrome, researchers trying to work at the molecular-level in the brain are faced with several obstacles, including that even the strictest diagnosis guidelines contain vague elements relative to unambiguous phenotypes encountered in conditions such as obesity and substance dependence, while the condition also lacks a clear consensus neuropathology, rare familial genetic identifiers, or penetrant genes indicating vulnerability, with the net effect being that researchers looking into the molecular basis of depression have been left with no obvious point from which to commence their investigations. The authors also note that despite support for the genetic risk aspect, the search for the actual genes involved in triggering depression has thus far offered little by way of tangible results. The authors add that these obstacles have contributed to a situation in which progress in understanding depression at the molecular level has moved at a very slow pace, particularly, they note, when compared to other multifactorial syndromes like type diabetes II mellitus and cancer.

Wong and Licinio (2001) note that while there is broad awareness on depression as a major cause of disability, little is known of its underlying biology. Attempting to identify why science lacks an unequivocal understanding of the biology of depression, the authors pointed to the inability of animal models to provide human analogues as one of the major obstacles. The key point here, as they outline, is that depression affects higher cognitive human processes, including motivation and self-esteem,

which cannot be modelled easily in animals. Animal reactions to the induction of pain, fear, or loss in experimental settings produce responses that are difficult to interpret, in that researchers cannot know with certainty whether those responses genuinely model depression as it affects humans or if the animals are merely exhibiting the effects of the experimental stimulus.

3.8.2 Psychodynamic models

Psychoanalytic theories have put forward several possible causes of depression over a period of time extending back almost a century. In 1917, Freud proposed object loss as the key to the source of depression (Freud, 1978). For Freud, perceived or real loss in later life triggers an association for a sense of lost love from childhood, with the disappointment arising from that early incident feeding into the later feeling. He also argued that if individual needs were not met during the oral stage of psychosexual development, then this instilled vulnerability towards depression in later life arising from low self-esteem and tendencies towards being overly dependent on others. He also theorised that human beings are essentially victims of our feelings, with depression a possible consequence of the coping processes that enable us to deal with emotional turmoil, i.e., Freud felt that repression and displacement are defence mechanisms to help us deal with genuine or perceived loss, but that these processes make us more vulnerable to lapsing into a state of depression. As with many of Freud's theories, it has been pointed out by numerous researchers in subsequent years that his ideas on depression are not as robust as they could be, given the relative lack of empirical support and the narrow population base with which he was working.

More than 30 years later, in 1953, Bibring proposed what he termed the mechanism of depression (outlined in Carr, 2006). This theory identified low self-esteem as the key issue, with this manifesting within an individual as a response to a disconnect between the self as it is and the ideal self. This view has it that when the ego cannot live up to the ideals it has set for itself, a state of helplessness follows, with this having a negative impact on self-esteem and, in turn, creating a context in which feelings of depression can take hold.

3.8.3 Behavioural models

Behavioural theories have offered up many suggestions as to the ultimate internal source of depression. One of the most prominent theories in recent decades has been that of learned helplessness, proposed by Seligman (1975). Laboratory work undertaken in the early stages of developing the theory showed that animals began to exhibit external signs seemingly comparable to symptoms of human depression when they were exposed to electric shocks and no action they undertook could prevent further shocks being delivered. Based upon this discovery, learned helplessness proposed that motivation to be an active agent in your own environment is compromised when individuals are exposed to situations in which adverse circumstances will play out irrespective of what action is taken in response to those circumstances. For an animal, this meant learning that when events are uncontrollable its behaviour choices are irrelevant to outcomes. When this connection is made, it leads to negative consequences at motivational, cognitive, and emotional levels, creating a space in which depression may take hold (Maier & Seligman, 1976). Another important element of the theory is that when helplessness is learned, animals stop trying to prevent adverse events (i.e., electric shocks), whether or not their

actions can influence outcomes. In essence, they learn to stop trying. Extrapolating from this evidence, Seligman suggested that individual depression was linked to a lack of motivation arising from a prior inability to control events around them. Abramson, Seligman, and Teasdale (1978) adapted the model for application to human populations, as the animal-based learned helplessness theory could not account for the greater behavioural and cognitive complexities of people. This updated model refers to attributional or explanatory style in human populations, and is regarded as more of a cognitive theory than a strictly behavioural one. Attributional style is one of the cognitive variables in the survey conducted during this research and is dealt with in more detail in Section 5.1 of this thesis.

3.8.4 Cognitive models

Cognitive theories maintain that the root cause of depression resides in disordered or distorted patterns of thinking. The dominant figure in this line of inquiry has been Aaron Beck (e.g., 1967). His research, and subsequent efforts which have attempted to adapt this work for application to adolescents (e.g., Compton et al., 2004), postulate that depression occurs when life events including loss happen and reactivate negative schemas – organised patterns of thought and/or behaviour - from childhood. Beck referred to these schemas as errors in logic, as they were irrational at root, though he stressed they were no less powerful for that. At the heart of this perspective is the idea that depression arises from an individual's distorted views of the self, rather than depression preceding negative self-regard. Beck is closely associated with the concept he referred to as the negative cognitive triad, which refers to a three-fold pattern of negative thoughts which he proposed as being present in those with depression – he found that these thoughts revolved around the self (worthlessness), the surrounding

environment (believing that the world is unfair), and the future (hopelessness). The more automatic and repetitive these negative thoughts are, the harder they will be to control. Individuals who frequently experience patterns of negative thinking along these lines will become increasingly vulnerable to depressive symptoms.

Beck (1963) also placed an emphasis on cognitive distortions, the specific types of thinking we engage in when skewing towards negative interpretations of events, independent of whether or not such reactions are justified by objective evidence. He noted how until that point the emphasis in the literature as it related to psychological correlates of depression had relied on an affective-motivational model when categorising and interpreting the verbal behaviour of individuals (i.e., concerned first and foremost with the impact of felt emotions), while cognitive processes received relatively little attention. Beck sought to bring those cognitive processes into the foreground. With that in mind, and arising from face-to-face interviews with sufferers of depression, he highlighted a number of patterns revealed in the thinking styles of participants, including tendencies for males to respond with self-derogatory thoughts if perceiving that another person appeared indifferent towards them, while females might consistently imagine themselves to be bad mothers based upon nothing more than merely seeing another woman with a child. He also noted low self-evaluations as a prominent element in depressed patients' self-ideations, as are self-criticisms, self-blame, the sense of problems being overwhelming, and coercive self-commands (nagging the self to perform certain tasks, even when to do so would be impractical, impossible, or undesirable).

While Beck proposed and first outlined the idea that cognitive distortions were linked to depression, Burns (1980, 1989) imposed a tighter categorisation on the respective themes expressed, contributing to the popularisation of the term. The categories outlined by Burns include *inter alia*: filtering (magnifying negative aspects associated with an event or situation, while filtering out the positive, in the process creating an overly-negative, distorted cognition), polarised thinking (black-or-white thinking styles, in which things must be one way or another, e.g., a person is perfect or a failure, creating a tendency to view oneself as a failure whenever performance falls short of perfection), overgeneralisation (reaching a general, wide-ranging conclusion based on a single, narrow instance, e.g., a setback experienced in one specific context is taken as an indicator that setbacks will occur in unrelated spheres), mind-reading/jumping to conclusions (becoming convinced that we know what someone is thinking without their saying so, with this tendency leading to negatively skewed thoughts, irrespective of whether they are justified or not), and catastrophising (always expecting disaster, every minor setback is treated as a major problem).

3.9 Why is it important to want to relieve or prevent depression?

Seeking to ameliorate or prevent depression among adolescents is a worthwhile endeavour for a number of reasons. Early onset depression in adolescence can have serious debilitating effects, with these manifesting in a number of ways, including poor academic performance (e.g., Frojd et al., 2008), alcohol and/or substance abuse (e.g., Taylor, 2011), and suicide ideation (e.g., Lasgaard, Goosens, & Elklit, 2011).

While these concerns are relevant to any age cohort, research has highlighted that individuals who suffer a depressive episode as an adolescent are more likely to experience further mood-related difficulties later in life than individuals who navigate

adolescence without doing so (e.g., Carr, 2008). Findings such as these highlight the potential long-term implications of a depressive episode in youth, which in turn underscores the potential benefits to be accrued from seeking to prevent or minimise the impact of depression and/or related symptoms among young people.

Figures such as those detailed previously highlight that the majority of mental health disorders reported by adults can be traced back to adolescence (e.g., Jones, 2013). As well as this, in a meta-analysis on preventing depressive symptoms in young people, Horowitz and Garber (2006) highlighted that early onset of depression increases the risk of further depressive episodes in adolescence and adulthood, pointing to recurrence rates of 45-72% over three to seven years. A logical corollary of this is that if young people can successfully make the transition from adolescence to adulthood without developing a mental disorder, then their chances of going through life without having to engage with mental health services are greatly increased (e.g., R. Park & Goodyer, 2000). This highlights the broad benefits that can be associated with emphasising prevention as opposed to treatment of depression.

There is also an economic argument to be made when highlighting the importance of actively seeking to encourage well-being in young people, ideally before mental health problems are experienced. During a period of global economic recession such as is currently ongoing, competition for available financial resources becomes particularly fierce; however, there is a case to be made that investment in prevention programmes could prove extremely beneficial when compared with the cost of treatment. Programmes geared around prevention can be relatively inexpensive, and if delivered effectively could help to ensure that potentially vulnerable individuals do

not end up requiring costly treatment to deal with either a mental disorder or the self-inflicted physical harm which can follow from being thus afflicted. We will discuss the issue of prevention programmes in more depth in Chapter 5.

There is a wide body of research which highlights the economic burden associated with mental disorders, including depression. P.E. Greenberg et al. (2003) reported that the economic cost associated with depression in the United States had increased from \$43.7 billion in 1990 to \$83.1 billion in 2000. When adjusted for inflation, the authors found that the cost of treatment had increased only marginally in that decade, despite the treatment rate increasing by more than 50 per cent, while almost two-thirds of the overall cost was associated with the workplace. Mood disorders have been found to impact heavily on workplace performance, translating into more than 320 million lost work days per annum (225 million attributed to MDD), either due to absenteeism or presenteeism (being physically present, but not healthy enough to function effectively) (Kessler et al., 2006).

Stewart, Ricci, Chee, Hahn, and Morganstein (2003) highlighted that workers with depression report far more health-related lost productive time than non-depressed counterparts. Based on data gathered during the American Productivity Audit, the authors found that workers with depression reported an average of 5.6 hours of lost productive time, as opposed to 1.5 hours per week.

J.P. Smith and Smith (2010) reported on a longitudinal study in the United States, which saw individuals monitored intermittently over a period of 40 years during the course of the Panel Study of Income Dynamics (PSID), consisting originally of 5,000

families and eventually 35,000 people, with a view towards determining to what extent the effects of illness and psychological problems impact upon life prospects. Details on family income, individual income, and labour market activity were sourced annually for 15 years from 1968, then at five-year intervals from 1984 to 1999, and every two years thereafter. Also, a retrospective child health history was included in the 2007 PSID, which saw participants asked whether they had any of 14 childhood physical illnesses before age 17, and also whether they had suffered from depression, drug or alcohol abuse, or other psychological conditions. Six per cent reported having experienced some psychological condition during childhood, while 4% indicated childhood depression. The authors estimated two models for each adult socioeconomic status outcome – ordinary least squares and fixed effects within-sibling models. They found that individuals with depression tend to have lower incomes and fare less well in formal education than non-depressed children, adolescents, and adults. They also found that those experiencing psychological problems on average work seven fewer weeks each calendar year, therefore losing one-fifth of potential income, translating into a lifetime loss of \$300,000 for a family with a depressed member.

In Europe, Gustavsson et al. (2011) highlighted the cost associated with disorders of the brain during the calendar year 2010. They found that for 27 EU nations, and Iceland, Norway, and Switzerland, the total cost attributable to these conditions in one year was €798 billion. This figure was reached by developing a cost model which combined the epidemiologic and economic data from the 30 participating countries. Direct costs accounted for 60% of this total (37% direct healthcare costs and 23% direct non-medical costs), while the remaining 40% included indirect costs related to

production losses. Of this figure, mood disorders were estimated to have cost €113 billion, making it the single largest category dealt with in the research.

Working from the same source material, Olesen, Gustavsson, Svensson, Wittchen, and Jonsson (2012) concluded that brain disorders are much more costly in Europe than previously thought. This, they stressed, means that tackling the issue constitutes a major health economic challenge. It was also pointed out that the €798 billion should be regarded as a conservative figure, as many disorders of cost items could not be included in the analysis due to lack of data.

Arising from this, an argument can be made that it makes financial as well as social sense to place a major emphasis on seeking to prevent mood disorders such as depression rather than make treatment the primary focus. As a corollary, it could prove beneficial to seek to encourage well-being and therefore foster positive mental health among all adolescents, rather than wait for teenagers to come to the attention of health services when they have already begun to experience problems. In essence, the case can be made that we can relieve the burden on health services in the future if we invest in actively seeking to nurture and cultivate well-being in young people now, thus seeking to prevent the onset of depression, with a view towards reducing its prevalence and therefore the financial cost associated with treatment, with the cost issue particularly pertinent given the wide body of work highlighting the tendency for relapses and the life-long struggle that can ensue following an initial MDE (e.g., R. Park and Goodyer, 2000).

As already detailed earlier in this chapter, the NSRF (2013) and NOSP (2013) have highlighted concerns around patterns of self-harm and suicide respectively as it relates to young people in Ireland. The NOSP annual report also places its figures into an EU context, using WHO data. When factoring in the entire population, Ireland had the sixth lowest suicide rate among the 27 member nations, with 11.8/100,000, while Lithuania topped the list with 34.1/100,000. However, when focusing on the 15-24 age bracket, Ireland rises to fourth on the list, with suicide accounting for 15.4/100,000, while Lithuania again leads the way, with 24.2/100,000. Among the 27 EU member states, Ireland was one of just two (the other being Luxembourg) for whom the suicide rate among the 15-24 group exceeded the lifespan average figure for the nation as a whole.

There is a considerable amount of literature making the case for the link between depressive symptoms and suicide and suicide ideation among young people. Lasgaard et al. (2011) conducted a longitudinal study into the relationship between loneliness, depressive symptomatology, and suicide ideation among adolescents in Denmark. The sample included 1,009 participants at T1 (57% females) and 541 participants at T2 (60% females), one year later. Depression was measured using a Danish version of the Beck Depression Inventory for Youth (BDI-Y), which identifies 20 symptoms of depression, while suicide ideation was measured using the relevant eight-item subscale from the Suicide Probability Scale. Hierarchical regression analyses were performed at the cross-sectional level, with depression as the dependent variable. In four successive steps, loneliness was entered with a view towards assessing the relationship between it and depression, then the specificity of this relationship was investigated by controlling for demographic factors, then additional variables known

to be related to loneliness and depressive symptoms (e.g., anxiety, perceived stress network association, and social support) were added to further test the relationship between the two key variables, and finally the model was further challenged by controlling for social desirability. Longitudinal analyses were also conducted, using Structural Equation Modeling to detect reciprocal associations between latent variables, while a stepwise approach was used to test for longitudinal invariance. The researchers found depressive symptoms to be a strong predictor of suicide ideation at the cross-sectional level. They found that current depression is a stronger predictor of suicide ideation than past depression, but they also noted that current depressive symptoms are an important risk factor for future attempts at suicide.

Horwitz, Hill, and King (2011) looked at coping behaviours in relation to depression in adolescence and suicidal ideation. Participants included 140 adolescents (83 females, 57 males, age range 13-17, mean = 15.47, SD = 1.42) who were seeking pediatric emergency services at a university hospital A&E department in the mid-west of the United States. Depression was measured using the 10-item Reynolds Adolescent Depression Scale (RADS), suicidal ideation was assessed using the 15-item Suicidal Ideation Questionnaire-Junior (SIQ-JR), and coping styles were measured using the 28-item Brief COPE, derived from the larger COPE Inventory. Hierarchical regression analyses were conducted to examine bivariate relations between depression, suicidal ideation, and specific coping behaviours. The authors found a connection between broad emotion-focused and avoidant coping strategies and risk for depression (behavioural disengagement and self-blame) and suicidal ideation (substance use and use of emotional support).

In a review of existing literature, Hawton and van Heeringen (2009) highlighted the connection between depression and suicide. They noted that the mortality risk for suicide associated with depression is far higher than that seen in the general population, pointing out that more than half of people who die as a result of suicide meet the criteria for current depressive disorder. The authors also noted that most young people who die as a result of suicide will have psychiatric-based disorders, with affective disorders among the most commonly found. On prevention, they suggested that all individuals diagnosed with depression should be screened for suicide risk, and also that diagnosis and treatment of depression is important in relation to reducing suicide rates.

Internationally, there is an emerging body of research indicating that recent years have seen a spike in depression and self-harming among adolescents, particularly, but not exclusively, females. Moran et al. (2012) conducted a population-based cohort study in Australia looking at the natural history of self-harm from adolescence into young adulthood. They recruited a stratified, random sample of 1,943 adolescents, drawn from schools between 1992 and 2008. Starting with a mean participant age of 15.9 years, they secured data on self-harm from questionnaires and telephone interviews over seven follow-up periods, with measures for a range of related variables sourced at the third and sixth waves, including depression. They looked at factors associated with self-harm using discrete time survival analysis, and found that incidents of self-harm during adolescence were independently associated with the presence of many variables, including depression. It was also found that participants reporting self-harm in early adulthood were more likely to have experienced distress in adolescence.

In an overview of self-harm, Skegg (2005) highlighted how studies of self-harming individuals who present at hospitals arising from their injuries show that more than 90% have at least one psychiatric disorder, with depression identified as the most common. The same writer goes on to refer to depression as “a well-known antecedent” (p. 1, 475) of self-harm.

Laye-Gindhu and Schonert-Reichl (2005) conducted research with a community sample of 424 school-based adolescents (236 females, 188 males), with the expressed purpose of identifying prevalence and types of self-harm, while attempting to garner insight into the underlying function of the practice. They found that 64 participants (48 females, 16 males) reported engaging in self-harming behaviours, while 42% of participants (53% of females, 28% of males) reported self-harm ideation. Specifically relevant to the current research, participants who engaged in self-harming activities rated a series of statements designed to glean data on motivation. Depression was among one of the most common responses offered by self-harming individuals, referred to by more than 50%.

Research such as that outlined above suggests that early intervention with a view towards pre-empting adolescents succumbing to any vulnerability towards depression, whether it be environmentally-influenced and/or genetic, would be desirable, both for the individuals concerned and society as a whole.

The impact of depression among adolescents can also be felt in academic performance. Frojd et al. (2008) conducted a study in Finland with a view towards investigating the association between different levels of depression and adolescent

performance in the school setting. The researchers recruited 2,266 participants from schools in the Finnish city of Pori, with an age range of 13-17 years (mean age: 15), while 50.8% were female. Levels of depression (the dependent variable) were measured using the BDI, while objective school performance was assessed using grade point average (GPA) scores, and subjective school performance was rated based on perceived loading of schoolwork and perceived difficulties in different areas of schoolwork (along with age, these were the independent variables). Results showed 18.4% of females and 11.1% of males were classified as being depressed – with these individuals reporting either severe or moderate symptoms. It was found that the more GPA had declined from the previous term, the more likely those individuals were to have been classified as depressed, but it was also noted that among males moderate depression was associated with an improvement in GPA. Depression severity at all levels was found to be more common among students who complained about the loading of schoolwork. Depression was also linked to difficulties in concentrating, paying attention to teachers, teamwork, doing homework, preparing for examinations, reading tasks, writing tasks, relationships with teachers, and also activities requiring the use of initiative. Multivariate analysis showed that both measures of objective school performance (GPA and change in GPA) were associated with self-reported depression. However, with cross-sectional studies, issues around directionality must be borne in mind, in that it is not possible to offer definitive conclusions on whether depressive symptoms influence school performance or if school performance impacts upon depressive symptoms. Subjective performance variables significantly predicting self-reported depression included high perceived loading of schoolwork and difficulties in social relationships and self-reliant school performance.

Glied and Pine (2002) examined the consequences and correlates of adolescent depression by conducting a secondary analysis of data accumulated in the United States during the conduct of the Commonwealth Fund Survey of the Health of Adolescent Girls, billed as a nationally representative classroom-based sample of adolescent males and females aged 10-18 years. This study restricted the sample size to 4,648 participants who completed survey questions on a number of specific variables, one of which was depressive symptoms, while the overall survey solicited extensive self-report data on health status, risk behaviours, and school performance. Examining the correlations between depressive symptoms and problem indicators, they measured school performance in terms of days of school missed due to illness and whether a child was in the expected grade level for their age. They found that depression was correlated with a significant increase in the number of school days missed, while depressed adolescent females were almost twice as likely to be a grade behind non-depressed counterparts. They also noted that while depression was linked to these negative outcomes, the outcomes themselves can place adolescents at risk for depression.

Quiroga, Janosz, Bisset, and Morin (2013) investigated the links between early adolescent symptoms of depression and school dropout in Canada. The study was based on a longitudinal sample of high-risk individuals, with participants recruited from two suburban secondary schools ranked among the three lowest deciles of socioeconomic status in Quebec. The final sample size included 493 participants (228 females, 265 males), with a mean age of 12.54 years at the beginning of the study. Depression was the predictor variable and was measured using the French version of the 22-item Inventory to Diagnose Depression. School dropout was the outcome

variable, and the researchers measured this by following participants until one year after they would normally have been expected to complete second level education – six years on from the initial gathering of data. They found that 33.7% of participants dropped out prior to receiving a high school diploma, and while some had attempted to re-enrol, none of those who dropped out had completed second level studies by the time of the final follow-up. Self-perceived academic competence was measured as a mediator variable, while sex, parental education, and grade retention were assessed for control purposes. A simple logistic regression analysis showed that depression was significantly related to dropping out of school, i.e., adolescents with higher levels of depressive symptoms were more likely to leave school prior to earning their completion diploma.

3.10 Summary

Depression has become one of the most widely-reported forms of psychological distress experienced in western societies (McLaughlin, 2011). The WHO (2008) identified MDDs as the third most common cause of burden of disease in the world. The WHO has also projected that depression will become the single leading cause of global burden of disease by 2030.

The DSM-IV-TR (APA, 2000) positions depression in the Mood Disorders category for diagnostic purposes. A distinction is drawn between MDE and MDD, with each listed separately, though it is stressed that MDE cannot be diagnosed as a separate condition; more correctly, depressive and other mood episodes are regarded as the building blocks for full disorder diagnoses. MDD requires one or more MDEs, with diagnosis for the latter requiring at least two weeks of depressed mood or loss of

interest, along with at least four other accepted symptoms of depression. The core symptoms of MDE are the same for children and adolescents, though there can be some variation, while females are more likely to experience MDE at some point than males, with the sex gap first appearing during adolescence. It is possible to report symptoms of depression without actually meriting a formal diagnosis. If an individual achieves a high-score in a self-report depression scale, depending upon the situation, the best response would be to recommend that the situation be monitored or seek further assessment.

The DSM-IV-TR states the prognosis for sufferers of depression is quite good (APA, 2000), but research suggests that the situation is more troubling for young people who receive this diagnosis. R. Park and Goodyer (2000) highlight that one in 10 of all children and adolescents who experience an MDE will remain persistently depressed, while relapse is also common in more than 50% of cases, and post-recovery most will go on to experience future depressive episodes.

There are differing thoughts over whether depression has become markedly more widespread since the middle of the last century or if we have gradually developed an increased awareness of a previously under-diagnosed condition. Seligman et al. (2009) point out that irrespective of which position researchers believe available data most supports, there is little disagreement on the point that depression is widespread and also that in many instances it goes untreated. Belfer (2008) states that mental health problems, including depression, afflict up to one-in-every-five young people in the world, while up to 50% of all adult mental health disorders can be traced back to initial onsets in adolescence. In the United States, the CDCP recently estimated that

almost 10% of adults report having experienced some form of depression (Gonzalez et al, 2010). Also in the United States, Kessler et al. (2003) reported that 16-17% of adults and 11-12% of adolescents have experienced an MDE at least once. Thapar et al. (2012) estimate 4-5% one-year prevalence for unipolar depression in mid- and late-adolescence throughout the world. Wittchen et al. (2011) researched the size and burden of mental disorders in 30 European countries, reporting that more than 33% of the population suffers from a mental disorder in any given calendar year. In Ireland, Barry et al. (2009) reported MDD rates of 6% among individuals over 18 years and that females were more vulnerable to the condition than men.

Stewart et al. (2003) highlighted the adverse effects depression can have in the workplace, reporting data to the effect that in the United States workers with depression lose 5.6 hours in weekly productivity, compared to 1.5 hours among non-depressed. In Europe, Gustavsson et al. (2011) found that the cost associated with disorders of the brain in 30 European countries during the calendar year 2010 was €798 billion, with mood disorders estimated as accounting for €113 billion of that figure. Olesen et al. (2012) concluded that these may be conservative figures, based on the fact that many disorders of cost items could not be included in the analysis due to lack of data.

There are several theories on the causes of depression, including biological, psychoanalytic, behavioural, and cognitive models. Biological theories highlight the genetic component, and therefore focus on family history and examine the possibility that predisposition towards being vulnerable to depressive symptoms is heritable.

Psycholanalytic theories have proposed many possible causes: Freud (1978) spoke in

terms of object loss, Bibring (outlined in Carr, 2006) described what he termed as the mechanism of depression (emphasising self-esteem and a disconnect between the self as it is and the ideal self). Among behavioural theories, learned helplessness (Seligman, 1975) is one of the most well-known. This theory was developed based on observation of animals reacting to situations in which adverse outcomes (i.e., electric shocks) will occur irrespective of their actions, and was adapted for use with human populations by Abramson, Seligman, and Teasdale (1978), with an emphasis on attributional/explanatory style. Aaron Beck is one of the most well-known figures as it relates to cognitive models/theories, with his work on the negative cognitive triad particularly influential.

When making the case for looking to relieve symptoms of depression or prevent their initial onset, we can point to a range of negative outcomes associated with the condition, including poor academic performance, substance abuse, self-harm, and suicide ideation. This is set against the finding, highlighted by Carr (2008) that adolescents who reach early adulthood without having experienced a serious mental health setback are far more likely to remain healthy throughout adulthood than counterparts who experience depression at a young age.

An economic case can also be made, as there is a wide body of research highlighting the direct financial costs associated with treating depression and indirect costs arising from workplace absenteeism and presenteeism (e.g., P.E. Greenberg et al., 2003; Kessler et al., 2006).

4. POSITIVE PSYCHOLOGY & WELL-BEING

4.1 Psychology and treating ill-being

As detailed in earlier chapters, psychology has proven itself adept at identifying and suggesting responses to ameliorate a range of mental health-related difficulties, including those to which adolescents tend to be most vulnerable, e.g., mood disorders such as depression.

Detecting, targeting, and treating debilitating psychological symptoms has been at the forefront of the endeavour of psychology since its foundation, and it has enjoyed some successes on these terms, contributing to the relief of mental health problems in people since its earliest days and particularly so in the second half of the 20th century and beyond, as the process of diagnosis and the techniques brought to bear on disorders have become increasingly more sophisticated. For example, with regard to depression, as outlined previously, the DSM-IV-TR (APA, 2000) identifies a range of conditions which it brings together under the Depressive Disorders umbrella category, and also the various symptoms which are required to justify relevant diagnoses.

However, psychology is about more than seeking to identify and treat negative symptoms and disorders of the mind, which brings us to positive psychology.

4.2 Positive psychology

While psychology has established itself as a useful discipline in the treatment of mental disorders, in recent years we have also seen a shift in the mental health literature away from the traditional focus on risk and psychopathology, and towards a

model which recognises the role that psychological strengths can play in encouraging and preserving mental health – positive psychology. This perspective maintains that it is at least equally important for psychologists to work towards identifying and cultivating positive individual attributes and strengths as it is to focus on alleviating symptoms of negative mental functioning. It also highlights a deliberate characterisation of well-being and related constructs as not being defined merely by the absence of negative symptoms, but with an overt emphasis on the benefits of positive functioning and the advantages that can accrue to individuals from seeking to identify and build individual strengths. This perspective was elucidated to noteworthy effect by Seligman and Csikszentmihalyi (2000) in a paper billed as an introduction to positive psychology. They stressed the desirability of directing the resources of psychology towards positive subjective experience, positive traits on an individual level, and also on positive institutions, with a view towards improving quality of life and preventing the mental health issues which can arise when it is perceived that life is empty and without meaning. The authors state that for a prolonged period psychology had largely ignored a wide range of positive emotions or characterised them as being somehow less authentic than their negative counterparts, e.g., courage, creativity, hope, perseverance, and wisdom. They stress that the focus on pathology which came to dominate mainstream psychology in the wake of World War II, with the consequent emphasis on healing within a disease model, while understandable, led to the neglect of study into fulfilled individuals and thriving communities. From that position and with a view towards redressing a perceived imbalance, they highlighted a fresh direction in psychological research, one which deliberately seeks to emphasise issues around what facilitates individual happiness, the effects of self-regulation and

autonomy, how optimism and hope can impact upon health, nurturing talent and creativity, and the meaning of wisdom.

However, it is important to stress that this development has not resulted in calls for the pathological model to be set aside. On the contrary, the important role that psychology has played, and presumably will continue to play, in the identification and treatment of mental disorders is recognised, but practitioners and researchers who focus on the promotion of strengths as opposed to responding to weaknesses and believe that psychology can be at least as effective in prevention as it is in treatment stress the legitimacy of this relatively new perspective which operates as part of a field in which the pathological model still broadly dominates.

Seligman (2002) defines positive psychology as the study of positive emotion, positive character, and positive institutions, and against that backdrop the area has devoted itself to the study of mental health and well-being. Seligman and other prominent researchers involved in this work do not claim to be the first psychologists to place an emphasis on the positive side of human functioning – they acknowledge a debt to humanistic psychology and its leaders, such as Carl Rogers and Abraham Maslow, and prominent social psychologists of the 1950s and 1960s such as Marie Jahoda and Erik Eriksson. Against this backdrop, Seligman, Steen, Park, and Peterson (2005) insist that latter-day positive psychology researchers “have enhanced our understanding of how, why, and under what conditions positive emotions, positive character, and the institutions that enable them flourish” (p. 410). In seeking to affirm the legitimacy of the field and emphasise its distinct features, Peterson and Park (2003) stress that the value of the term positive psychology itself resides in its

bringing together of a previously disparate line of research and theories concerned with the idea of what makes life most worth living.

4.3 The benefits of positive emotions

One of the key findings which have emerged from the growing body of research in this area is that measurable benefits can accrue to individuals who experience more positive emotions, both in the present and over time.

Lyubomirsky, King, and Diener (2005) conducted a review of existing literature with the expressed purpose of looking at the benefits of frequent positive affect, and more specifically, asking whether happiness leads to success. The researchers posited a conceptual model to the effect that the happiness-success link exists not just because success increases happiness, but also because the presence of positive affect itself can be a precursor to success. To test this idea, they looked at three classes of evidence – cross-sectional, longitudinal, and experimental studies. Their analysis took into account findings reported in 225 papers on research conducted with more than 275,000 participants. They found that a key point as it relates to positive affect is the amount of time that it is experienced by individuals, as opposed to its intensity, with the former taken to be a defining element of happiness. This, in turn, saw the authors define happy individuals as those who report experiencing sustained levels of positive affect over time. They measured long-term positive affect, happiness, and well-being in line with how the studies under consideration did so, e.g., self-report measures and moods operationalised by experimental manipulations. The effect sizes of the studies described were combined meta-analytically. One of the inclusion criteria was that for a study to be included it needed to have either a zero-order correlation coefficient or

information that could be converted to an r effect size. Examples of such information, as referred to by Lyubomirsky et al., were t -tests, F tests, means and standard deviations, and chi-squares.

Looking at cross-sectional studies, Lyubomirsky et al. (2005) first attempted to address the question of whether happy people are successful. For the purposes of their analysis, they conceived of success as referring to accomplishing things valued in the context of the culture in which one finds oneself, and dealt with this under three headings – work life, social relationships, and health. They found the evidence to be limited in places, but felt sufficiently comfortable with the data on hand to state that it appears to be the case that high SWB is positively related to favourable outcomes in those three areas. They reported that happy people tend to be more successful than less happy peers in those three primary life domains – work, relationships, and health - reporting approximate moderate correlations, in line with the effect size guidelines set out by Cohen (1988). The authors then asked whether long-term happiness and short-term positive affect are associated with behaviours regarded as paralleling success. They found that both appear to be associated with several desirable characteristics, including positive construals of the self and others, sociability and activity, prosocial behaviour, popularity, healthy behaviour, high immune functioning, and good coping with distress, in all instances reporting approximate moderate correlations. They also noted that while the evidence was less conclusive, their analysis suggested that very happy people and those experiencing pleasant moods may be more creative and more efficient problem solvers and might also exhibit superior conflict resolution skills.

When looking at longitudinal evidence, Lyubomirsky et al. (2005) first asked whether happiness precedes success. While noting that the longitudinal literature was far less extensive than that using correlational approaches, the authors stated that published findings were both robust and consistent, suggesting that happiness precedes noteworthy indicators of individual thriving, including fulfilling and productive work (mean $r = .24$), satisfying relationships (mean $r = .21$), and superior mental and physical health and longevity (mean $r = .18$). They then asked whether happiness and positive affect precede behaviours judged to parallel success. In answering this research question, they focused on studies that related baseline short- and long-term happiness with assessment of resources and characteristics paralleling successful outcomes at T2. Again, they noted the relative scarcity of relevant research, but stressed that all those studies which they found supported the idea that both long-term happiness and short-term pleasant moods seem to precede the desirable characteristics with which they are correlated, as outlined in the previous paragraph.

Turning their attention to experimental evidence, Lyubomirsky et al. (2005) then attempted to address whether positive affect leads to behaviours that parallel success. They considered six categories of experimental research - looking at positive perception of self and others, sociability and activity, negotiation and conflict resolution, prosocial behaviour, physical well-being and coping, and creativity and problem solving. Arising from this analysis, they reported on findings to the effect that transient happy moods tend to lead people towards seeking out others, to engage with the environment, and to be more open, sensitive to others, and venturesome (seeking excitement and welcoming change). They also pointed to findings indicating that temporary elation has been linked with greater perceived relationship closeness,

and increased activity, as well as excited, affectionate, and affiliative feelings.

Summing up this element of their work, the authors stated that the review of the experimental literature offered compelling evidence to the effect that positive affect fosters a number of resources, skills, and behaviours, including sociability and activity (mean $r = .51$), altruism (mean $r = .43$), and liking the self and others (mean $r = .36$). They added that there was little evidence to support the idea that individuals induced to feel happy moods exhibited superior coping abilities, engaged in healthier behaviour, and were more popular. It was also noted that positive affect can sometimes lead to poor problem solving and in other instances more efficient solving of complex tasks, with the specifics of the situation involved being a key element. They described as “intriguing” (p. 840) findings which showed that the mean effect size for complex mental tasks performance was $r = .25$, despite some contradictory results within the overall sample of studies. While, according to Cohen (1988), this is a small effect size, the authors felt it offered evidence to possibly support the relationship between positive affect and performance on complex mental tasks.

Ultimately, Lyubomirsky et al. (2005) concluded that happiness is frequently associated with and can also precede a variety of successful life outcomes and behaviours that run parallel to success. They also found that positive affect, regarded as a key indicator of well-being, may be the cause of personal characteristics and resources correlated with happiness. Findings such as these highlight the potential benefits and therefore desirability of seeking to boost well-being in a participant population.

As well as this, it has also been found that high levels of SWB are not merely a consequence of perceived success in aspects of life, but can also facilitate high performance and achievement across a range of life domains, thus suggesting a form of positive feedback loop. The suggestion that happiness, well-being, and optimal performance are inextricably linked, as opposed to having a more linear, cause-and-effect relationship, informs the broaden-and-build theory of positive emotions, one of the most influential theories to have emerged from the positive psychology movement. In this theory, Fredrickson (1998, 2001, 2003, & 2004) suggests that the experience of a wide repertoire of positive emotions broadens individual awareness and encourages novel, varied, and exploratory forms of thought and action. She further argues that over time such a broadened behavioural repertoire would have the effect of building durable skills and resources, with positive implications for coping arising from that (Fredrickson & Joiner, 2002). Fredrickson voices the idea that not only do positive emotions signal flourishing, but that they also produce flourishing, both in the moment and over time, suggesting a self-sustaining cognitive feedback loop. She identifies joy, interest, contentment, pride, and love as phenomenologically distinct discrete emotions that share an ability to broaden momentary thought-action repertoires and build enduring physical, intellectual, social, and psychological resources. She stresses that not only do positive emotions broaden thought-action repertoires, but that they can also undo lingering negative emotions, acting as an antidote of sorts. She refers to this latter claim as the undoing hypothesis (Fredrickson, 2001).

Fredrickson and Losada (2005) assessed the impact of positive affect, in line with the broaden-and-build theory, on human flourishing. Studies were conducted with two

independent samples, both drawn from the undergraduate student population at a United States university. The first sample was made up of 87 participants (60% female) and the second included 101 participants (54% female). Initially, flourishing mental health was indexed by a 33-item instrument measuring positive psychological and social functioning. Fredrickson and Losada stated that 11 of the items specifically measured positive functioning, and that participants who scored high on six of these were classified as flourishing. All participants then logged on to a website each evening for a period of 28 days and rated from 0 (not at all) to 4 (extremely) how much they had felt each of 20 emotions during the previous 24 hours. The emotion words included both positive (e.g., gratitude, hope, joy, love) and negative (e.g., anger, embarrassment, fear, shame). The authors then tallied for each participant the number of positive emotions felt at least ‘moderately’ and negative emotions experienced at least ‘a little bit’, and an overall positivity ratio was calculated for each by dividing total positive emotions experienced by total negative emotions experienced. They found that mean positivity ratios for flourishing versus non-flourishing participants differed significantly. In the first sample, the mean ratio for flourishing individuals was 3.2 versus 2.3 for other participants, while the corresponding figures for the second sample were 3.4 and 2.1 respectively. They concluded that both samples demonstrated that flourishing mental health was associated with positivity ratios in excess of 2.9. However, the claims for specific ratios linked with flourishing made in this paper have subsequently been withdrawn, following N.J.L. Brown, Sokal, and Friedman (2013) calling into question Losada’s nonlinear dynamic model. While Fredrickson (2013) does not dispute the calling into question of Losada’s work, she maintains that the proposed link between positivity ratios and flourishing remains compelling even when removing the mathematical

modelling element, and instead relying exclusively on psychological theory and quantitative data. The published correction (Fredrickson & Losada, 2013) notes that the modelling element has been formally withdrawn, but stresses that the data accumulated during the study remains valid and that the key finding that positivity ratios were significantly higher for individuals identified as flourishing relative to other participants continues to hold.

Fredrickson, Cohn, Coffey, Pek, and Finkel (2008) tested the ‘build’ element of the broaden-and-build theory in a meditation experiment with an adult population in a work setting. The stated hypothesis was that becoming skilled in loving-kindness meditation would, over time, increase daily experience of positive emotions, and that this would build a variety of personal resources with positive consequences for mental health and overall life satisfaction. One hundred and thirty nine participants (mean age: 41 years; 65.5% female) were recruited from a United States-based IT company, 67 of whom were assigned to the meditation condition and 72 to a waitlist control group. Participants completed an initial survey assessing a range of cognitive, psychological, social, and physical resources, while the outcome measures were life satisfaction (Satisfaction With Life Scale) and depressive symptoms (Center for Epidemiologic Studies Depression Scale). Upon completion of the baseline assessment, participants were assigned to the respective conditions. The meditation intervention was conducted across six 60-minute group sessions, with 20-30 participants per group. Participants also completed daily reports asking them to rate their experience of 19 specific emotions (either positive or negative) on the same 0-4 scale referred to in Fredrickson and Losada (2005). The authors assessed the impact of meditation on positive emotions over time using hierarchical linear modelling.

They found that while time did not significantly predict positive emotions for control participants ($b = -0.008$, $SE = 0.0079$, $p = .31$), it did for those in the meditation condition ($b = 0.03$, $SE = 0.008$, $p = .0001$). They tested the full ‘build’ hypothesis by combining a growth model for positive emotions with an SEM path analysis. On this point, they reported that the path from baseline positive emotions to changes over time was not significantly affected by initial levels of those emotions. They stated that the paths from change in positive emotions to change in resources and from change in resources to change in life satisfaction were key to the hypothesis, and that these paths were found to be significant for nine of the resources tested (e.g., mindfulness, self-acceptance, purpose in life). They said this suggested that increases in positive emotions seen during the course of the study were associated with significant increases in these resources, and that this was then associated with significant increases in life satisfaction. Examining whether a similar pattern existed when looking at depressive symptoms, they found that positive emotions made an impact both directly and by building individual resources, with these then also exerting an influence. The authors concluded that the study supported the ‘build’ element of broaden-and-build.

Schutte (2014) examined the effect of using a shortened version of the meditation approach tested by Fredrickson et al. (2008) and also explored the role of the ratio of positive to negative affect and positive to negative emotions in the broaden-and-build process. Four hundred and eight participants were recruited from a variety of non-clinical settings in Australia and Canada (mean age: 38.31 years). All participants completed baseline measures of affect and general self-efficacy, while subsets of the sample completed measures of general mental health, relationship satisfaction, and

work satisfaction. It was stated that only subsets completed certain measures because the author did not want to overburden participants in terms of the time required to complete questionnaires. Upon completion of the pre-measures, 219 participants were randomly assigned to the loving-kindness meditation condition and 189 to a waitlist control condition. Active condition participants took part in the three-week meditation programme adapted from the longer version conducted by Fredrickson et al. (2008). The meditation programme was conducted entirely via recorded instruction, i.e., there was no face-to-face contact between participants and a practitioner. One month on from completing the pre-measures, all participants completed the same questionnaires as post-measures. Adopting the 3:1 ratio of positive to negative emotions recommended (and subsequently called into question, as detailed previously) by Fredrickson and Losada (2005) as a demarcation point for individual flourishing, Schutte reported that 60 participants met this criterion at baseline and that 88 did so at post-test. ANCOVAs were conducted to examine the effect of the intervention on the variables measured, with intervention versus control group acting as the independent variable, post-test scores used as the dependent variable, and pre-test as the covariate. It was reported that the intervention programme had a significant effect on positive affect [$F(1370) = 20.08, p < 0.001, \text{partial } \eta^2 = 0.05$], negative affect [$F(1377) = 25.46, p < 0.001, \text{partial } \eta^2 = 0.06$], the ratio of positive to negative affect [$F(1369) = 55.12, p < 0.001, \text{partial } \eta^2 = 0.13$], and flourishing 3:1 ratio [$F(1369) = 20.39, p < 0.001, \text{partial } \eta^2 = 0.05$]. Schutte concluded that the findings of this study partly replicated those of Fredrickson et al. and therefore added support to the broaden-and-build theory.

4.4 Well-being

As mentioned previously, research into well-being, and the related concept of happiness, was a fringe pursuit in psychology, relative to studies into the pathological implications of human mental dysfunction, until well into the second-half of the 20th century. It was not until 1973 that *Psychological Abstracts International* began listing ‘happiness’ as an index term, while the following year saw the launch of the journal *Social Indicators Research*, which devoted a large amount of space to articles on human well-being. The volume of published papers on this subject spiked and the scope of associated investigations broadened in the 1980s and 1990s, with this pattern of expanding interest continuing into the current century.

Wilson (1967) presented one of the earliest broad reviews of literature into subjective well-being (SWB). He referred to it as ‘avowed happiness’, arising from the reliance on self-report questionnaire-type measures in relevant studies. This review offered up the finding that a happy individual tends to be a “young, healthy, well-educated, well-paid, extroverted, optimistic, worry-free, religious, married person with high self-esteem, high job morale, modest aspirations, of either sex and of a wide range of intelligence” (p. 294). He also added that little theoretical progress had been made in understanding happiness since the time of the ancient Greek philosophers. While the latter point may have been true at the time and Wilson’s description of a happy individual in accord with the state of research when he was writing, the study of happiness and well-being has advanced in the near-half-century since then.

More recent reviews of the field (e.g., Diener, 1984; Diener, 2012; Diener, Suh, Lucas, & Smith, 1999) stress that the state of knowledge has progressed since the late-

1960s, and many of the conclusions outlined by Wilson have been overturned. For example, youth and modest aspirations are no longer seen as pre-requisites for happiness, while the relationship between income and well-being is now widely regarded as being more complex than the assumption that happiness and well-being increase in tandem with improved financial circumstances. Easterlin (1974) was among the first to note that higher incomes do not necessarily correspond to higher SWB, pointing to the influence of comparison effects, arguing that people compare their incomes to those around them, and that this influences their subjective experience of felt well-being. While Easterlin approached the issue from an economic perspective, psychological research has pointed to a positive relationship between the wealth of a nation and average SWB, but has also found that wealthy people are only somewhat happier than poor people in rich nations, while wealthy nations appear much happier than their poor counterparts (Diener, Diener, & Diener, 1995). Recent research has stressed that income can account for variance on some measures of life satisfaction (e.g., Frijters, Haisken-DeNew, & Shields, 2004; Jorgensen, Jamieson, & Martin, 2010), while Kahneman and Deaton (2010) point to an emerging distinction between evaluation of life and emotional well-being as two aspects of SWB, with only the former positively affected by high income, while other research maintains that once basic life needs are met, increased income offers little or no happiness dividend (e.g., Ahuvia, 2008; Dolan, Peasgood, & White, 2008), and it has also been found that both economic and social factors can contribute to individual well-being (e.g., Gleibs, Morton, Rabinovich, Haslam, & Helliwell, 2013).

4.5 What is well-being?

As research into the components of and outcomes associated with well-being has broadened in recent decades, so have conceptions of what constitutes well-being and to what extent notions of happiness are related to it, unto the point where there is no single, universally accepted answer to the question: What is well-being? For the purposes of this research, as previously detailed, well-being is being operationalised as high subjective happiness and satisfaction with life, and low depressive symptoms. Depression is discussed in depth in Chapter 3. Here, we will look more closely at subjective happiness and life satisfaction, but first we will look at the broader area of SWB before narrowing our focus.

Ed Diener is closely associated with the idea of well-being as an inherently subjective experience, and of SWB as relating to happiness, life satisfaction, and the cultivation of positive affect, while minimising the experience of negative affect. This view of well-being maintains that happiness is an internal state, experienced by the individual arising from subjective evaluations made relating to perceived quality of life. These evaluations can vary from individual to individual, and much SWB research has been devoted to investigations of the factors that can influence those appraisals, including material wealth (e.g., Diener & Biswas-Diener, 2002; Hellevik, 2003; Luthar, 2003), individual temperament (e.g., Garcia & Siddiqui, 2009; Lykken & Tellegen, 1996; Pavot & Diener, 2004), and comparison standards (e.g., Easterlin, 1974; Michalos, 1985; Steffel & Oppenheimer, 2009). This focus on the subjective element of well-being, and well-being as synonymous with happiness, is embedded in the hedonic tradition, which is interested first and foremost in the pursuit of positive emotions and with this quest regarded as key to life satisfaction – the ideal being an existence

devoted to maximising positive feelings and minimising the negative in pursuit of happiness.

A second strand of research into well-being has also opened up, with concepts relating to eudaimonia now being investigated in their own right (e.g. Waterman, 1993), as opposed to being treated as merely a sub-set of SWB, with this departure reflective of the position that adhering to a strictly hedonic view of happiness is unnecessarily limiting, and does not facilitate efforts to come to a greater understanding on the nature and components of well-being (e.g. Seligman, 2002). Seligman characterises happiness as having a three-fold structure – the pursuit of pleasure/positive emotion, engagement, and meaning. The first is hedonic, the increasing of positive emotion. He characterises this as the state most people are referring to when they describe themselves as being happy in a given moment. It can be increased within certain parameters, but with positive affect being partially influenced by genetic factors, (e.g., the ‘set-point’ theory outlined by Lykken & Tellegen (1996), which proposes that up to 50% of our capacity to experience positive emotions may be genetically predetermined) this suggests limitations within each individual influencing the extent to which positive emotion can be experienced and maintained. For Seligman, engagement and meaning are characterised by absorption and applying our talents in service of a cause we regard as being more important than ourselves.

Deci and Ryan (2008) summed up the situation by stating that research on well-being tends to fall into one of two traditions – with the hedonic regarded as being about happiness, defined as the presence of positive affect and the absence of negative affect, and the eudaimonic emphasising a focus on living life in a full and satisfying

manner. It is the former focus, that of the hedonic perspective, that is more relevant for the current research. Kashdan, Biswas-Diener, and King (2008) maintain that self-report questionnaires are vital when studying happiness: “There is no better way to gauge someone’s positive experiences, life satisfaction, self-determination, and meaning in life than to directly ask about them” (p. 220).

4.6 Subjective well-being

At the core of the view of happiness as SWB is the contention that every individual is best-placed to form a judgement on whether or not they are living a life with sufficient well-being (Diener, 2000). Within this framework, dispositional happiness relates to the ways in which people react to life circumstances and stimuli in their personal environments in terms of the happiness they perceive themselves as feeling in the moment or in retrospect. The ‘subjective’ element of SWB is also stressed, as it emphasises the paramount role of the individual in ultimately assessing their own levels of positive affect. In this, the views of the individual on their own happiness are given primacy over those of an external presence (e.g., a researcher), on the basis that no-one is better placed to judge the happiness felt by an individual than that individual themselves.

Operational definitions of SWB usually come in two broad categories – measuring the presence of positive affect and negative affect in individuals over a set period of time, from in the moment to over a period of weeks or months, and cognitive assessments of life satisfaction. Self-report measures are widely used to assess the level of positive and negative emotions felt by an individual. Among the most frequently used are the

Satisfaction with Life Scale (SWLS; Diener, Emmons, Larsen, & Griffin, 1985), and the Subjective Happiness Scale (SHS; Lyubomirsky & Lepper, 1999).

4.7 Predictors of happiness and life satisfaction

While low self-reported happiness or life satisfaction is undoubtedly problematic for those experiencing it, it is also important to note that research indicates that the majority of people tend to report happiness above midpoint in relevant scales. Diener and Diener (1996) reported on pre-existing cross-national data to the effect that most people, when asked, will tend to indicate positive happiness and satisfaction with life domains such as work, marriage, and leisure, and that the tendency to report positive well-being is also seen among disadvantaged groups. In a review of progress in SWB research over the previous three decades, Diener et al. (1999) highlighted the tendency for researchers to attempt to explain differences in SWB either in terms of genes or environmental factors. They reported that there are many different strands of evidence indicating that personality can exert an influence on SWB (e.g., twin studies, early temperament findings, longitudinal studies, and correlations with personality scales), while in presenting more recent findings, Diener (2012) pointed to the discovery of culture-specific predictors of SWB, the fulfilment of basic needs as a predictor, and differences in levels of SWB between societies. As mentioned previously, Lykken and Tellegen (1996) have presented set-point theory, which refers to an individual's heritable disposition for happiness. Against this backdrop, Diener et al. acknowledge that the amount of variance in individual long-term SWB attributable to genetic make-up is frequently moderately high, but stress that it would not be correct to conclude that genetics offers a full explanation. Lykken and Tellegen view

genetic predisposition as accounting for approximately half of the variance in SWB, while also pointing to the respective roles of life circumstances (10%) and volitional activity (40%). Similarly, Diener et al. point to possibilities other than genetics, highlighting research into individual goals and strivings, and the ways in which people cope with difficulties, challenges, and setbacks. Diener et al. see no easy answers when asking the question of what causes SWB, but they view the different approaches and perspectives on the issue as complementary rather than contradictory, highlighting genetic factors, culture, cognition, goals and resources, and the objective environment.

In a paper seeking to address the question of to what extent is it possible to become happier, Sheldon and Lyubomirsky (2007) noted the role of genetics, stating that it may be “the single most important determinant of SWB” (p. 132). They state that some people appear predisposed to cheerfulness, optimism, and joy, while others can be born more likely to experience fearfulness, pessimism, and depression. They note that an implication of data on heritability is that it suggests SWB cannot be changed, with people tending to return to default baselines even after major life events, along the lines proposed by Lykken and Tellegen (1996). However, Sheldon and Lyubomirsky emphasise that even if set-point theory is correct, heritability accounts for just 50% of the variance in SWB, and point to the fact that the combined effects of life circumstances and volitional activity also account for 50%. Against this backdrop, they suggest that it may be more beneficial to think in terms of an SWB set-range, as opposed to set-point. In proposing this distinction, they present an equation to the effect that individual SWB is made up of genetics and fixed temperament (i.e., set-point), relevant and changeable life circumstances (e.g., income, health, marital

status), and current activities (i.e., what goals we pursue, why we do so, and with that level of success), with set-point as the default that will drive the outcome in the event of all the other variables amounting to zero, but that the levels of those other variables can detract from or enhance that value. This, they contend, suggests that individuals have a characteristic SWB where they would most likely be found at any given time, with larger deviations from the middle of that set-range difficult to achieve and maintain. Positioned within the context of their question on increasing happiness, the authors propose that while this suggests that some people will never reach a state of perfect joy, we can all aspire to attain our own “highest happiness potential” (p. 135), with the 40% of SWB variance attributed to volitional activity said to be key. The goal, as Sheldon and Lyubomirsky state it, is for individuals to have as many positive experiences over time as possible, and for these to fit one’s personality disposition, to vary in their content (thus avoiding hedonic adaptation, i.e., the tendency to become accustomed to the cause of positive/negative emotions and thus somewhat immune to their effects over time), and to vary in their timing (again, to minimise possible hedonic adaptation).

Elaborating on this point, Sheldon and Lyubomirsky (2007) offer a parallel between engaging in running as an activity to improve personal fitness and the process of increasing individual SWB. They outline that to be effective in the assigned task, the activity of running needs to be somewhat interesting and enjoyable in its own right, it needs to take place in a variety of locations, so that experiences associated with the activity remain novel, and it needs to take place at the right times, i.e., when the individual feels excited by the prospect or recognises the need to run following a period of inactivity. The authors state that SWB-enhancing activities operating along

these lines (i.e., an enjoyable activity, presented in a variety of ways, and enacted when individuals are 'ready' for it) can offer a steady flow of positive experiences, which can facilitate increases in SWB "over and above the effects of her set point" (p. 136). In so doing, the SWB-enhancing activity in question would be catering to what Sheldon and Lyubomirsky regard as two key points – facilitating movement towards an individual's highest happiness potential while also preventing hedonic adaptation.

Also, the validity of set-point theory itself has been questioned. Headey (2010) proposed that it had serious flaws, arising from findings reported by the German Socio-Economic Panel Survey (SOEP). Headey bills the West German part of this longitudinal study as the world's longest-running panel to collect annual data on life satisfaction, and he reports on annual data given by 3,000 participants from 1985. For the purposes of the SOEP, life satisfaction is assessed by a single item on an 11-point Likert scale, in which 0 means 'totally dissatisfied' and 10 corresponds to 'totally satisfied'. Headey acknowledged that single-item measures tend not to be the most accurate, but stressed that this particular measure had been reviewed and found to be adequate by Diener et al. (1999). Analysing the available data, the author reported that the SOEP indicated substantial changes in set-point among some participants over time, whether defined as five year averages of life satisfaction, predicted by personality traits, or predicted by unchanging within-person factors.

Results under the heading of the first definition showed the most marked variation over time. Headey reported that from 1985-1989 and 2000-2004, 31.8% of participants saw changes of one standard deviation (approximately 1.4 points) and 18.2% saw their score increase or decline by two or more points (approximately 1.5

standard deviations). Across the three definitions, Headey found that 14-30% of panel members recorded large and seemingly permanent changes in their set-point, with these changes deemed not compatible with the theory as currently understood. However, while these results suggest a fluidity to set-point not necessarily envisaged by Lykken and Tellegen (1996), they may add further weight to Sheldon and Lyubomirsky's (2007) proposal of set-range as being as a more useful concept when trying to understand SWB and make the case for how it can change over time.

4.8 Benefits of positive affect

When stressing the desirability of positive affect, it is reasonable to ask why we should look to facilitate it. There is a growing body of research highlighting beneficial outcomes associated with positive affect and well-being at different points along the human lifespan.

Among the most well-known studies into the potential benefits of positive emotion is that undertaken by Harker and Keltner (2001), who looked at female facial expressions in college yearbook photographs and considered them in the context of long-term life outcomes. In this United States-based study, data accumulated over a period of decades during the course of research into personality and life circumstances were examined, while the researchers also analysed photographs of participants published in 1958 and 1960 yearbooks. The photographs were analysed with a view towards examining the extent to which positive emotionality relates to life trajectories. Facial expressions were coded using the Facial Action Coding System (FACS), which distinguishes units of facial activity that are anatomically separate and visually distinguishable. In their findings, they highlighted the Duchenne smile from

other, less authentic ways of smiling. The Duchenne smile involves the full face, particularly more muscle movement around the eyes, leading to crow's feet, raised cheeks, and bagging under the eyes. Non-Duchenne smiles tend to focus more on the mouth, and can be regarded as more about politeness or concealing true feelings in a given circumstance. The researchers found that participants who exhibited Duchenne smiles in the yearbook photographs were more likely to report high well-being 30 years later, and were more likely to have been married by age 27, less likely to remain single into middle adulthood, and more likely to report satisfaction in married life three decades on.

Another well-known study on the potential life benefits of positive emotion is the 'nun study'. Danner, Snowdon, and Friesen (2001) analysed handwritten autobiographies written by 180 Catholic nuns in the United States for positive, negative, and neutral emotional content and related those findings to life outcomes more than 50 years later. A coding system to rate the autobiographical essays was designed specifically for the purposes of this research. Their analysis suggested a strong association between positive emotional content contained in the pieces of writing and longevity six decades later. Their results indicated that those who exhibited the highest positive emotional content had a life expectancy of 6.9 years more than counterparts whose writings were found to contain the least amount of positive content.

Hoyt, Chase-Lansdale, McDade, and Adam (2012) investigated whether positive well-being in adolescence could predict better perceived health and fewer risky health behaviours in young adulthood. Working with data accumulated during the first three

waves of the United States-based National Longitudinal Study of Adolescent Health, the researchers targeted a stratified sample of 80 high schools ($n = 10,147$) and restricted their analysis to adolescents in grades 7-11 (this suggests an age range of 12-16, though it is not explicitly stated in the paper). The authors looked at two main outcomes – perceived general health and risky health behaviour index. Ordinal logistic regression and then logit model analyses were conducted on data. They found that positive well-being in adolescence was significantly associated with reporting better perceived general health in young adulthood and fewer risky behaviours in Wave III. Commenting on these findings, Hoyt et al. suggested that actively seeking to promote and nurture positive well-being during the period of transition between childhood and adolescence may yield long-term dividends for individual health.

Chaplin, Bastos, and Lowrey (2010) investigated to what extent happiness affects the stereotypes which adolescents in the United States hold towards other people. They recruited 60 participants from schools and after-school programmes – 30 from the 7th/8th grades (age range: 12-13 years) and 30 from the 10th/11th grades (age range: 16-17 years). This cross-sectional study saw participants undertake the relevant tasks individually, with an experimenter present, in a private room. Participants completed a single-item measure assessing global happiness, while stereotypes of various social roles as favourable or less favourable were assessed using a collage methodology. In this approach, participants are asked to construct collages to represent certain social roles, i.e. ‘cool’ or ‘quiet’ kids. Analysis of the collages suggested that happier adolescents are less likely to form impressions of others based on surface-level cues, i.e., products and brands people own. They also found that happier adolescents exhibit a more nuanced, less categorical-leaning perspective on others, identifying that

‘some’ cool kids may wear expensive clothes, while others may purchase clothing at thrift stores. By comparison, the researchers found that less happy adolescents were more inclined to offer simplistic, broad-sweeping explanations, tending to view others in one way only, i.e., suggesting that ‘all’ cool kids wear expensive, branded items of clothing.

Diener and Ryan (2009) conducted a comprehensive review of the SWB field, and highlighted a number of benefits associated with high well-being and life satisfaction under four headings – social relationships, work and income, health and longevity, and social benefits of happiness. They stressed that the bulk of the findings they dealt with were correlational in nature, and therefore it would be unwise to assign causality. They emphasised that the causal relationship in these situations was unclear, pointing to the example of well-being and friends; some findings suggested that well-being is caused by having high numbers of friends, but it was also found that individuals with high well-being are more adept at making friends. The authors noted that causality in such situations is very difficult to determine and that this point needs to be kept in mind when considering such results. With regard to social interactions, they point to a two-way relationship as being indicated by the literature. While individuals with more friends and family members will tend to report higher levels of SWB, it has also been found that high SWB encourages closer and more supportive social relationships than are seen with individuals who are found to have low baseline life satisfaction. In terms of work and income, research has indicated that people with high SWB are likely to earn more money than individuals who report relatively low SWB, and this tends to be so irrespective of occupation. Also, people reporting high SWB are more likely to derive satisfaction from their work. Under the health and longevity heading,

they point to findings showing that people with high SWB tend to report better health and fewer unpleasant symptoms, and also that people with high SWB can be more resistant to viruses. The authors stress that the societal benefits associated with happiness run counter to the negative stereotypes that can sometimes be attached to people who pursue happiness, e.g., that such people are selfish and irresponsible, and engage in activities for their own benefit rather than that of the wider community. Instead, the authors point to research suggesting that people with high SWB are more likely to engage in altruistic activities such as volunteering for community or charity groups, and among those people who engage in such activities, those with SWB tend to devote more time to them.

4.9 Distinguishing between happiness and life satisfaction

Lyubomirsky and Lepper (1999) highlight the affective and cognitive aspects of well-being, while, as it relates to measurement, stressing the relevance of subjective processes. As mentioned previously, this point is made against the backdrop of noting that individuals can react differently to the same situations and occurrences, and that even extreme events such as serious personal injury or winning a multi-million lottery jackpot tend to impact profoundly on well-being in the short-term but less so over time (e.g., Brickman, Coates, & Janoff-Bulman, 1978), with people instead tending to return towards their default levels of SWB, in line with set-point theory (Lykken & Tellegen, 1996). Lyubomirsky and Lepper offer preliminary evidence supporting the Subjective Happiness Scale (SHS), which they present as a measure of universal subjective happiness, i.e., attempting to capture both the affective and cognitive aspects of well-being. Measures looking at the affect side of happiness (e.g., the Positive and Negative Affect Scale) can look to assess the balance of positive and

negative affect experienced during defined periods of time. However, the affective element of perceived happiness does not capture the full picture. Lyubomirsky and Lepper highlight this when pointing to the fact that an individual may identify as being a very happy person while only perceiving themselves as having a somewhat happy life, while another individual may regard themselves as being generally unhappy despite reporting feeling positive affect during the time periods specified by relevant questionnaires.

Diener, Emmons, et al. (1985) developed the Satisfaction With Life Scale (SWLS) specifically to assess the cognitive element attached to SWB. For the purposes of their work, they identified three distinct components to SWB – positive affect, negative affect, and life satisfaction; the first two referring to affective, emotional aspects of the SWB construct and the third to cognitive-judgemental aspects. As with Lyubomirsky and Lepper, they stress the subjective element, pointing out that individuals themselves judge to what extent they experience happiness or life satisfaction, and that standards and criteria are not externally imposed by a researcher. They stress that life satisfaction refers to the judgements people make when assessing whether the circumstances of their life compare favourably or acceptably to what is regarded as an appropriate standard. Diener, Emmons, et al. state that prior to the development of the SWLS, specific investigation in this area had been somewhat neglected. They stress that the scale was designed around the idea that the only way to competently measure individual life satisfaction is to ask participants for an overall judgement of their life.

Proctor, Linley, and Maltby (2009) conducted a review of literature on youth life satisfaction. Billing life satisfaction as a central construct within positive psychology, they note that it has been studied far more often in adults than in children and adolescents, with the latter group only beginning to receive concerted attention in recent years. They looked at 141 empirical studies, highlighting a range of different findings on related issues and constructs. With regard to levels of life satisfaction, they found that most studies indicate that young people, as with adults, tend to report life satisfaction in the positive range. However, they also note that research indicates that global life satisfaction tends to decline with the onset and progression of adolescence, and that this trend has been detected by researchers in a number of countries, e.g., United States, Israel, South Korea, and China. Proctor et al.'s review suggests that personality and temperament variables account for most of the variance in SWB. They also note the genetic aspect, pointing to research indicating that heritable effects of personality and the influence of temperament can predispose individual levels of SWB. Research with both adults and younger people indicates that happiness is positively associated with extraversion, while negative associations have been found with neuroticism. Life satisfaction has also been found to positively correlate with variables like self-esteem and self-efficacy.

Existing research indicates, as with subjective happiness, that adolescents tend to fare well on self-report measures of life satisfaction. Huebner, Drane, and Valois (2000) assessed life satisfaction among 5,545 school-going adolescents in the United States (52% females) as part of a wider survey into youth risk behaviour. Participants were drawn from years 9-12 of High School, suggesting an age range of approximately 14-18. Life satisfaction was assessed using six items included in the Youth Risk

Behaviour Survey questionnaire, with respondents asked to rate their overall satisfaction with life, and also on five specific domains – family, friends, school, self, and living environment. Each item was rated on a seven-point Likert scale. Huebner et al. found that global life satisfaction ratings did not tend to differ on grounds of sex, school grade, or race. When broken down by sex and ethnicity (African American and Caucasian), mean scores on this item ranged from 5.30 to 5.41 (maximum score: 7). The authors concluded that most adolescents assessed reported positive levels of life satisfaction, both in a global sense and in terms of the specific domains also examined.

Nickerson and Nagle (2004) examined life satisfaction in different life domains in middle childhood and early adolescence. Participants included 303 children and adolescents drawn from schools in the United States, ages ranging from 8 to 15 years, and with females accounting for 52% of the overall sample. Life satisfaction was measured using the 40-item Multidimensional Students' Life Satisfaction Scale, which includes sub-scales on school, friends, family, self, and living environment, with each item rated on a four-point Likert scale. The authors reported that the mean for total life satisfaction among the overall sample was 3.09 (maximum score: 4), which they reported as indicating “a moderately high level of overall satisfaction with life” (p. 41).

N. Park and Huebner (2005) assessed life satisfaction among 472 Korean (M = 15.22 years; 49% females) and 543 United States-based participants (M = 14.89; 54% females). Global life satisfaction was measured using the Students' Life Satisfaction Scale, a seven-item measure which utilised a six-point Likert scale, in this study.

Mean life satisfaction among American participants was 4.27 (maximum score: 6), while for Koreans the corresponding score was 3.30. The authors noted that the pattern whereby the Korean participants trailed their United States-based counterparts was consistent with previous research.

4.10 Summary

The discipline of psychology has proven to be largely successful in identifying and suggesting responses to a range of mental health problems, including those to which adolescents tend to be most vulnerable, e.g., mood disorders such as depression.

Positive psychology acknowledges the valuable purpose that the traditional focus on risk and psychopathology has served, but contends that the emphasis on a pathological paradigm has come at a price, namely the neglect of positive aspects of human life. This perspective maintains that it is at least equally important for psychology to work towards identifying and cultivating positive individual strengths as it is to focus on identifying and treating symptoms of negative mental functioning.

The broaden-and-build theory (Fredrickson, 1998) highlights the potential benefits that can accrue from experiencing positive emotions. This theory proposes that the experience of a wide repertoire of positive emotions – such as joy, interest, contentment, and love - broadens individual awareness and encourages novel, varied, and exploratory forms of thought and action. Fredrickson (2001) also maintains that the experience of positive emotions can undo lingering negative emotions, with this referred to as the undoing hypothesis.

Happiness only emerged as a mainstream research topic in the second half of the 20th century. Wilson (1967) was among the first to focus on this area, describing SWB as ‘avowed happiness’. In later years, researchers such as Ed Diener became prominent and influential. Diener is most closely associated with the idea of well-being as an inherently subjective experience, and relating SWB with happiness, life satisfaction, and the cultivation of positive affect, while minimising the experience of negative affect.

Operational definitions of SWB usually come in two broad categories – measuring the presence of positive affect and negative affect in individuals over a set period of time and cognitive assessments of life satisfaction.

Benefits of positive affect related to happiness and life satisfaction tend to be detected across a range of spheres, with Diener and Ryan (2009) presenting them under four headings – social relationships, work and income, health and longevity, and social benefits.

Lyubomirsky and Lepper (1999) highlight the affective and cognitive aspects of well-being. Happiness tends to relate to affective experiences, while life satisfaction reflects the cognitive aspects of well-being (Diener, Emmons, et al., 1985).

Diener and Diener (1996) point out that the majority of people will tend to self-report healthy scores in ratings of subjective happiness and life satisfaction. Research with adolescents has also reflected this trend (e.g., Lyubomirsky & Lepper, 1999; Huebner et al., 2000).

5. COGNITIVE VARIABLES INFLUENCING WELL-BEING

When seeking to conduct research into well-being, it is important to examine a range of variables that may have predictive value. For the initial survey undertaken in this research, as well as including questionnaires on three well-being-related dependent variables (as detailed in previous chapters - subjective happiness, depressive symptoms, and life satisfaction), a number of other questionnaires measuring relevant constructs were also included, with a view towards assessing to what extent each of these independent variables were associated with well-being scores self-reported by participants. It was anticipated that relationships detected between DVs and IVs would inform the selection of well-being intervention techniques to be deployed in the follow-on studies also being reported in this thesis. Over the next four chapters, we will examine each of the survey IVs in turn. Chapters 6, 7, and 8 will deal with mindfulness, gratitude, and control variables (personality and sex) respectively, while in this chapter we will look at the potential predictive value of five cognitive variables - attributional style, dispositional optimism, self-efficacy, resilience, and self-esteem.

5.1 Attributional style

Attributional style (or explanatory style) refers to how individuals tend to explain the causes of negative events in their lives. The concept emerged from a reformulation of the learned helplessness model of depression. The original formulation proposed that when events are uncontrollable, an animal learns that its behaviour has no bearing on outcomes, and that when this occurs negative implications follow for the animal at motivational, cognitive, and emotional levels, with this creating a cognitive context in which depression may manifest (Maier & Seligman, 1976). The 'learned' aspect of this helplessness can become so embedded that an animal will stop trying to prevent a

negative outcome even when it is possible to do so. Adapting the pre-existing model to take account of the peculiarities of human responses to uncontrollable aversive events, Abramson, Seligman, and Teasdale (1978) added the concept of explanatory style, with which they sought to distinguish between individual reactions to the subjective experience of helplessness in the context of a negative event. They identified four shortcomings of the original learned helplessness model of depression when applied to a human population: expectation of uncontrollability is not sufficient grounds for depressed affect, as many uncontrollable life outcomes do not sadden us; lowered self-esteem, as a symptom of the depression syndrome, is not adequately explained; the tendency for depressed individuals to make internal attributions for failure is not explained; and variations in the generality, chronicity, and intensity of depression that can arise in response to perceived helplessness are not explained. Awareness of these concerns led the authors to develop an attributional framework, with a view towards modifying the existing model to make it more applicable to human beings. They put forward the argument that when a person finds that they are helpless in a given situation, they will ask themselves why that is the case. The causal attribution they attach to the situation will determine how they respond to it. Against this backdrop, it was theorised that if individuals attach a stable/long-lasting cause to a particular event (as opposed to transient or unstable causes), then helplessness can be chronic; if the cause is regarded as pervasive/global (as opposed to specific to the situation at hand), then helplessness can be widespread; and if an internal cause is attributed to the negative event (as opposed to an external source, independent of the individual), then this can have a detrimental impact upon self-esteem. Thus, the reformulated model ascribed human depression in the face of perceived helplessness to internal, stable, and global factors. However, it was also stressed that the

explanations and explanatory styles that facilitated those perceptions were not sufficient in and of themselves to produce depressive symptoms, but are more correctly regarded as risk factors for producing those symptoms in individuals.

As outlined by Peterson and Seligman (1984), individual attributional/explanatory style in given situations tends to follow a pattern, i.e., people interpret negative events in consistent, habitual ways. When these habitual thinking styles invoke internal, stable, and global causes for negative events on an ongoing basis, as opposed to external, unstable, and specific causes, then this tendency constitutes a serious risk factor for increased depressive symptoms.

Abramson, Metalsky, and Alloy (1989) proposed a further revision of the learned helplessness model, emphasising hopelessness. One of the key distinctions made being that while the helplessness model of depression emphasises the tendency to attribute internal, stable, and global causes, in the hopelessness model, the internality dimension of causal attributions is downplayed.

As detailed previously, cognitive theories maintain that disordered or distorted patterns of thinking are a root cause of depression. Beck (e.g., 1967) stated that depression occurs when adverse life events reactivate negative schemas from childhood. These schemas are regarded as irrational, as they are built on errors in logic, arising from distorted views of the self. Beck developed the negative cognitive triad to articulate this theory, the three-fold pattern of negative thoughts relating to the self, the surrounding environment, and the future.

As referred to in the chapter dealing specifically with depression, Beck (1963) emphasised what he referred to as cognitive distortions, thinking habits in which negative interpretations of events override whatever objective evidence may suggest about those events. Beck's work saw him highlight negative patterns seen in the thinking styles of depression sufferers. Burns (1980, 1989) developed the idea that cognitive distortions were linked to depression, introducing categories including *inter alia*: filtering (magnifying negative aspects associated with an event), polarised thinking (black-or white thinking), overgeneralisation (reaching wide-ranging conclusions based on a single, narrow instance), mind-reading/jumping to conclusions (becoming convinced that we know what someone is thinking without their saying so, and with a tendency to make negative assumptions), and catastrophising (where minor setbacks are treated as major problems).

Joiner Jr. and Wagner (1995) conducted a meta-analytic review examining attributional style and depression in children and adolescents. Twenty-seven cross-sectional and prospective studies, including 4,125 participants, were reviewed. The authors highlighted that 13 of the studies reported cross-sectional data on the relationship between overall attributional composite scores and self-reported depression. A strong relationship was found between these two variables, with all studies examined reporting statistically significant effects. They reported a combined effect size that was described as quite large (average $r = -.50$, average $Z = 5.72$, combined $Z = 20.61$, $ps < .0001$). Based on these figures, they concluded that overall attributional composite scores were reliably and strongly related to self-reported depression, and found no indication that scores varied based on sex, age, or whether the sample was clinical or non-clinical. A further four studies were analysed to assess

prospective relations between attributional composites and depression. They counselled caution in reading too much into their findings given the small number of studies involved in the analysis, but reported finding moderate support for overall composites acting as a prospective predictor of increases in depression. The four studies involved 2,533 participants, and the analysis showed a significant predictive relationship, albeit with a small combined effect size (average $Z = 1.07$, combined $Z = 1.85$, $ps = ns$). They concluded that the evidence clearly demonstrated a correlation between attributional style and depression in young people.

Moore and Fresco (2007) examined the relationships between attributional style, dysphoria, and the extent to which individuals exhibit objectivity or realism about the causes of life events, with a view towards assessing implications for individuals at risk for depression. The participant group was made up of 239 undergraduate students in the United States – 136 females and 103 males (mean age: 19.49 years).

Participants completed the Attributional Style Questionnaire (ASQ), the Beck Depression Inventory-Second Edition (BDI-II), and the Content Analysis of Verbatim Explanations (CAVE), with both the ASQ and CAVE requiring individuals to rate causal attributions for positive and negative events, but with the latter, participants were also asked to rate causes of events if they had happened to other people, with the two sets of answers offering CAVE-Self and CAVE-Other totals. Objectivity was assessed by comparing participants' answers with those given by independent raters on the same items and calculating a difference score in which zero denoted perfect objectivity, +7 was the maximum optimistic bias, and -6 the maximum pessimistic bias. Participants were stratified in terms of ASQ and BDI-II scores. For the ASQ, scores of 4.5 or more were deemed indicative of a depressogenic attributional style,

while for the BDI-II, participants with scores of 14 or more were labelled dysphoric. With a view towards testing hypotheses that, in line with the concept of depressive realism, individuals with a depressogenic attributional style would be more realistic than those with a nondepressogenic style in attributing causes to events, and also that dysphoric individuals would be more realistic than nondysphoric, a multivariate analysis of variance (MANOVA) was conducted, with attributional style and dysphoria as IVs, and realism of attributional style (the objective CAVE ratings-CAVE-Self difference rating) and the CAVE-Self-CAVE-Other difference scores the DVs. The authors reported significant multivariate differences for attributional style (Wilks' lambda = .73, $F(2, 191) = 35.76$, $p < .001$, Cohen's $f = .61$) and dysphoria (Wilks' lambda = .96, $F(2, 191) = 4.02$, $p = .02$, $f = .20$), with the former reporting a large effect size and the latter approaching a medium effect. They tested the hypothesis that participants with a depressogenic attributional style would be more realistic using univariate follow-up tests, reporting significance and a large effect size for realism ($F(1, 196) = 44.38$, $p < .001$, $f = .48$). However, running counter to their hypothesis, they found participants labelled as having a depressogenic attributional style were less realistic than non-depressogenic counterparts. Two one-sample t-tests were then conducted to test if depressogenic and nondepressogenic groups were more or less objective in relative terms, with, as referred to previously, scores approaching zero indicating greater objectivity. For the purposes of this analysis, the independent raters formed the comparison group in each t-test. The authors found that realism scores for both groups differed significantly from zero, but in opposite directions, with non-depressogenic participants exhibiting more realism in their causal attributions (non-depressogenic: $t(110) = 4.16$, $p < .001$, $d = 0.79$; depressogenic: $t(85) = -8.37$, $p < .001$, $d = -1.82$). They also evaluated their second hypothesis (that dysphoric

individuals would be more realistic than non-dysphoric individuals) using univariate follow-up tests. Counter to expectations, dysphoric individuals exhibited less realism than non-dysphoric participants. They concluded that participants with a depressogenic attributional style and dysphoric individuals (irrespective of attributional style) were less objective in assessing the causes of events in their lives. Also, those with a depressogenic attributional style were found to be pessimistically biased, whereas those with a non-depressogenic attributional style were optimistically biased. In addition, dysphoric individuals were found to be biased pessimistically where non-dysphoric individuals tended to be relatively realistic in their attributions of events.

Peterson and Vaidya (2001) examined the relationship between explanatory style, expectations, and depressive symptoms. One-hundred-and-fifty-five first year undergraduate psychology students (79% females, mean age: 18.1, age range: 17-20 years) completed the Life Orientation Test (measuring dispositional optimism versus pessimism), rated 16 positive psychosocial and academic events (in terms of how likely those things were to happen for them compared to their fellow students), rated 14 negative events, and also completed the BDI brief version, along with the ASQ. In line with expectations, the authors found that stability and globality of explanatory style (i.e., being more likely to ascribe permanent and wide-ranging causes to negative events) was positively correlated with self-reported depressive symptoms ($r = .20, p < 0.05$). The four expectation measures (optimism and pessimism subscales of the LOT, along with specific expectations for good events and bad events) were found to be substantially correlated (median $r = .35$).

Kim-Spoon, Ollendick, and Seligman (2012) examined the moderating role of attributional style in the relationship between perceived competence and depressive symptoms among an adolescent population in the United States. Participants included 431 young people (210 males, 221 females), with a mean age of 13.62 at T1. This longitudinal research saw participants provide data on three occasions across two years. Participants completed the Children's Attributional Style Questionnaire-Revised (CASQ-R), Self-Perception Profile (SPP), and Reynolds Adolescent Depression Scale (RADS). To test the hypothesised moderating effects of attributional style in linking perceived competence and depressive symptoms, the authors tested latent interaction models with a maximum likelihood estimation method. They found that the main effect of depressive attributional style was significantly predictive of depressive symptoms measured at T2, and when they found a significant sex-based difference, the main effect of depressive attributional style was stronger for females. They concluded that depressive attributional style may be a moderating factor linking low perceived competence and depressive symptoms, but noted that these findings were sex and domain specific, i.e., lower levels of perceived competence in physical appearance among adolescent females were related to more depressive symptoms at T3, but only among those with higher depressive attributional style when controlling for previous depressive symptoms. Also, among both males and females with higher depressive attributional style, those who felt less competent in the athletic sphere exhibited greater levels of depressive symptoms at T2, but athletic competence was not related to later depressive symptoms among participants with lower depressive attributional style.

In Ireland, Nevin, Carr, Shevlin, Dooley, and Breaden (2005) assessed attributional style among 294 community-based adolescents (40% males, overall mean age: 16 years 4 months) who had been pre-screened on happiness, life satisfaction, and general health, and then profiled as having either high, moderate, or low SWB. Participants completed the Children's Attributional Style Questionnaire (CASQ), a 48-item hypothetical events measure. While females reported higher scores on the CASQ than males across all three levels of well-being, the highest scores irrespective of sex tended to be achieved by participants in the high well-being group, while moderate well-being participants tended to fare better than those in the low well-being group. While this study also saw other variables assessed (e.g., self-esteem, coping, social support, and problem solving), the authors made a point of highlighting the finding that high well-being group members tended to have greater personal strengths than those in the other groups, including an optimistic explanatory style.

Ciarrochi, Heaven, and Davies (2007) utilised a longitudinal design to examine the impact of hope, self-esteem, and attributional style on Australia-based adolescents' school grades and emotional well-being. At T1, 784 students took part (males = 382, mean age = 12.30, SD = 0.49), while at T2, one year later, data were collected from 942 participants. At T1, participants completed the six-item Children's Hope Scale, the 10-item Self-Esteem Scale, the 24-item CASQ-R, and the Positive and Negative Affect Schedule-X (PANAS-X) to assess four affective states (hostility, fear, sadness, and joviality), and standardised numerical and verbal assessments. At T2, participants again completed the PANAS-X, as well as the hope and self-esteem scales, while teacher ratings of emotional and behavioural adjustment were also sourced (a 34-item multidimensional peer nomination inventory), as were end-of-year school grades

achieved in English, Mathematics, Science, Religious Studies, Visual Art, and Design (scored on a five-point scale, 1 represented the lowest achievement and 5 the highest). All questionnaires were completed during class time. In preliminary statistical analyses, the authors found that positive attributional style correlated significantly with both self-esteem ($r = .36, p < .001$) and hope ($r = .46, p < .001$). Citing the hierarchical structure of the data collected, the authors chose to conduct multi-level random coefficient (MLRC) modelling, with individual schools treated as one level within the analysis, while students in those schools were treated as the other level. Analysing the impact of positive thinking on school grades in the six subjects mentioned, positive attributional style was found to predict better scores only in Design. They next evaluated whether participants who scored high on positive thinking would show greater increases in emotional well-being compared to those who scored low on positive thinking variables while showing the same baseline emotional well-being. They found that while no individual positive thinking variable had an influence across all elements of well-being, positive attributional style significantly predicted changes in scores for hostility and fear. They also noted that negative attributional style was the only predictor of hostility.

Sanjuan and Magallares (2009) examined the interactive effects between a negative explanatory style, in which individuals tend to ascribe internal, stable, and global causes to negative events, and attributions of uncontrollability for those events to predict symptoms of depression. A seven-week longitudinal design saw a group of female undergraduate Open University students in Spain complete measures of attributional style and depression at two junctures. At T1, 130 participants took part (age range: 19 to 58), while 101 continued at T2. Of the overall sample, 77% were

employed, while 23% were full-time students. Participants completed Spanish versions of the ASQ and BDI, with data collected during the course of regularly scheduled classes. A hierarchical multiple regression analysis was conducted to test the hypothesis that individuals with a negative explanatory style who explain events through uncontrollable causes would report higher depression scores at T2.

Depressive symptoms at T1 were entered at step one, negative explanatory style and attributions of uncontrollability at step two, and attributions of uncontrollability interaction at step three. Results showed that both negative explanatory style and uncontrollability at T1 predicted depressive symptoms at T2. Participants reporting a greater negative explanatory style or uncontrollability at T1 were found to be more likely to report depressive symptoms at T2. The authors reported that the most important finding of the study was the significant interaction seen between negative explanatory style and uncontrollability in predicting depressive symptoms.

Sanchez Hernandez and Mendez Carrillo (2010) conducted research which highlighted how an optimistic explanatory style, in which individuals explain positive situations in terms of permanent and global attributions and negative situations as temporary and specific, relates significantly to lower symptoms of depression among young people. The Spain-based sample included 172 participants (63% females, mean age = 10.7). Participants completed the CASQ and CES-DC. In their analysis, the authors found a negative relationship between general explanatory style and depressive symptoms ($r_{xy} = -0.37$, $p < .001$). In line with expectations, the relationships between explanatory styles of favourable situations or adverse situations and depressive symptoms were negative and positive respectively ($r_{xy} = -0.21$, $p = .007$; $r_{xy} = 0.30$, $p < .001$). They noted that these results indicated that the greater the reported

optimism in explanatory style, the lower the depression, with the reverse also being the case.

An important change in emphasis in this area of research occurred in 1991, when Seligman outlined his shift in focus from looking at explanatory styles that lend themselves to depression to investigating explanatory styles that foster strength in adversity. In essence, rather than focusing on people whose habitual explanatory styles put them at risk for depression, he began to focus on individuals who rarely if ever seemed to exhibit those reactions to and rationalisations of negative events, and instead reported optimistic explanatory styles to the effect that negative events are regarded as temporary setbacks, relate to specific sets of circumstances, and can be overcome. Stressing the importance of this shift in emphasis, Peterson (2006) suggested Seligman's elucidation of the ideas behind and expression of interest in the concept of learned optimism, thus essentially flipping learned helplessness, may constitute the true beginning of positive psychology.

Fundamental to this change in emphasis was the contention that just as helplessness could be learned in response to negative stimuli in the environment, so too could the habits of optimism be cultivated. At the heart of this approach was encouraging individuals to recognise the wide range of cognitive distortions that operate in their thinking – automatic, negative, and faulty thinking styles that people tend not to question, instead accepting as 'true'. Seligman (2006) details an approach in which the key to tackling cognitive distortions is through a process referred to as 'disputing', in which people come to recognise distortions in their thinking as they occur and challenge them, just as they might do if those sentiments were being expressed by an

outside source. Seligman explains that because these distortions arise in our mind, we are inclined to accept them without challenge, merely assuming them to be accurate. The core challenge for cognitive behavioural approaches targeting this tendency is to make the individual aware of what is happening when they think this way and to then challenge those thoughts. From this, Seligman maintains, comes the potential to rise above automatic negative thoughts and reframe your own thinking style, creating a context in which more positive, optimistic styles may emerge. This position maintains that even if heritability is a factor in whether individuals skew more towards optimistic or pessimistic thinking styles, the skills of optimism can be transmitted, therefore people high in pessimism and with a negative explanatory style can learn the habits of how to think in a more positive way.

This process of targeting and highlighting the irrational basis of cognitive distortions with a view towards alerting individuals to the possibility of actively cultivating more constructive thinking styles is one of the key cornerstones in CBT approaches, and also cognitive-behavioural coaching (CBC), in which the emphasis is less overtly therapeutic in nature and more geared towards enhancing individual performance. As the current research is informed by positive psychology, it was decided that any interventions used during the post-survey studies should reflect that perspective, i.e., programmes should be designed to build strengths as opposed to tackle weaknesses/repair deficits. With regard to cognitive-behavioural approaches, this suggested favouring a CBC programme over CBT. This point will be discussed in more detail in Section 15.2.

5.2 Dispositional Optimism

Scheier and Carver (1985) conceive of optimism as dispositional, and therefore a trait, possessed by all people to varying degrees. They note that people differ in how they approach the world, with some exhibiting a more favourable outlook than others, generally believing that good things will happen to them. On the other hand, those with a more pessimistic outlook will tend to expect things not to go their way, and will anticipate negative outcomes. They note that these individual differences in how people anticipate future events appear to be relatively stable across both time and context, meaning that optimists will tend not to limit their optimistic tendencies to one domain or setting, while the same tends to be true for pessimists, whose negative outlook tends to cross over into many behaviours and settings.

Carver, Scheier, and Segerstrom (2010) place this trait-based view of optimism within the tradition of expectancy-value theories of motivation. According to this view, behaviour reflects the conscious pursuit of goals, objectives, or desired states identified by individuals. The more important an identified goal is to a person, the greater its perceived value (Higgins, 2006). The other key aspect of this model, expectation, relates to how confident an individual is that the goal in question can be achieved. Against this backdrop, Carver et al. position optimism and pessimism as broad, generalised versions of confidence and doubt. When viewed through the prism of expectancy-value theories, this confidence and doubt is expressed by the degree to which people believe their desired goals are achievable – an optimist may persist in moving towards a desired outcome, even in the face of setbacks and adversity, because they are confident that their efforts will eventually be rewarded; whereas a pessimist who doubts whether they will ever achieve their goal may either be further

dissuaded by any adversity and stop trying, or based on their initial doubt may not even begin to pursue their goal, instead assuming they will not succeed and from that point declining even to try. Carver et al. note that the expectancy-value model can be applied to a wide range of activities in which optimism/confidence or pessimism/doubt may influence outcomes, from narrow contexts (e.g., the ability to go to convenience stores to purchase food), to moderately broad contexts (e.g., the ability to prepare a meal), to broader contexts (e.g., the ability to develop a reputation as a good host).

As well as being conceived of as a trait, optimism has also been conceptualised as an explanatory style. Forgeard and Seligman (2012) outlined the distinctions between the two approaches – the explanatory style model sees researchers asking participants how they interpret life events as they occur or after the fact, whereas research informed by the dispositional optimism perspective sees participants asked about how they expect future events to unfold. Forgeard and Seligman also describe this as expectational optimism, both to highlight the projecting-forward element in which participants are asked about their beliefs on the future as opposed to the past and to draw attention to the point that explanatory styles also constitute stable dispositions. The explanatory style interpretation of optimism is dealt with in the section immediately preceding this one, and therefore does not need to be elucidated further at this time. However, it is important to stress that seeking to measure both dispositional optimism and explanatory style does not constitute duplication of data. Carver et al. (2010) noted that stable attributions for negative events are not strongly associated with measures of generalised expectancies, and therefore the two constructs should not be regarded as interchangeable. However, Carver and Scheier

(2005) noted that while there are important differences between the two approaches, they also share key conceptual points – primarily, that expectations influence actions and experiences, and at a core level that optimism is the expectation of positive outcomes and pessimism is the expectation of negative outcomes. Carver and Scheier also note that a key distinction between the two approaches is that one measures variables prior to the expectancy (i.e., optimism looks at how someone feels about an event yet to occur), while the other measures the expectancy itself (i.e., with attributional/explanatory style, the emphasis is on the causes people ascribe to events after they have occurred).

Carver et al. (2010) also stressed the importance of not considering optimism and pessimism as different categories. Instead, they regard describing different people as optimists or pessimists as “a verbal convenience” (p. 880). They conceive of optimism and pessimism as effectively being on a single spectrum. According to this view, it is not correct to regard one person as optimistic and therefore not pessimistic, or pessimistic and therefore not optimistic. Instead, as they characterise it: “Almost never is a line drawn and people placed in one group or the other. People range from very optimistic to very pessimistic, with most being somewhere between” (p. 880).

With regard to the stability of optimism, the bulk of research indicates that stable sources such as genetics and environment have a role to play. Numerous twin studies have explored the genetic component. Mosing, Zietsch, Shekar, Wright, and Martin (2009) measured optimism, mental health, and self-rated health among a population of 3,053 individual twins in Australia, and found that additive genetic factors of 36%, 34%, and 46% respectively accounted for the variation in those three variables, with

the remainder said to be owed to non-shared influences in the living environment. Mosing, Pedersen, Martin, and Wright (2010) developed this research by combining Australian twin data with that available from Sweden. The same three variables as in the earlier research were measured, with data from 812 Swedish twin individuals added to the pre-existing Australia-based sample. Among females, the correlations conducted showed all three traits to be moderately variable (.27 to .47), but noticeably lower heritability was found for males (.08 to .19). However, no significant sex differences were detected, and so the differences found between males and females were deemed to be due to a lack of power. Carver et al. (2010) note that while heritability estimates in the range of 25% are lower than those seen for many personality traits, such figures should still be regarded as substantial. Forgeard and Seligman (2012) note with regard to genetic factors that the impact on optimism may be indirect, pointing out that genes more than likely influence other factors which may, in turn, influence individual optimism, e.g., intelligence or level of attractiveness.

With regard to environmental factors influencing dispositional optimism, Heinonen, Raikonen, and Keltikangas-Jarvinen (2005) examined the impact of childhood perceived temperament and mother's child-rearing attitudes on self-reported optimism-pessimism among adults in Finland. Participants were drawn from a pre-existing longitudinal study on cardiovascular risk in young Finns, which allowed the researchers access to data accumulated over a 21-year period for the 509-strong group (females = 308) that formed the analytic sample of their study. Criteria for inclusion included the availability of data on maternal ratings of temperament and child-rearing attitudes from childhood and measures of dispositional optimism from adulthood.

They found that maternal perceptions of children as temperamentally difficult at ages 3-6 and 6-9 predicted hostile child-rearing attitudes (i.e., emotional distance, low tolerance, and strict discipline), and that this, in turn, predicted greater pessimism for those children in adulthood, at age 24 and age 27, with perceptions of child difficulty and hostile rearing accounting for 5% of optimism-pessimism over 21 years.

Heinonen et al. (2006) then conducted further research investigating the potential link between optimism and pessimism scores provided by 694 adults aged 24 and 27 (from the same longitudinal cardiovascular risk study) and socioeconomic status both at the current time and also in childhood at ages 3 and 6. Among their findings was that lower family socioeconomic status during participants' childhood years predicted lower optimism and higher pessimism scores in adulthood, even when controlling for adult socioeconomic status.

Over the last two decades or so, a large body of research has built up highlighting the link between self-reported optimism and pessimism and a range of positive outcomes relating to well-being.

Extremera, Duran, and Rey (2007) examined the relationship between perceived emotional intelligence, dispositional optimism-pessimism, and psychological adjustment in a Spain-based adolescent population, with psychological adjustment operationalised as perceived stress and life satisfaction. Data from 498 participants, recruited from schools and occupational centres, were used in the study (females = 296, mean age = 15.76, range = 12 to 19 years). Perceived emotional intelligence was measured using a 24-item Spanish version of the Trait Meta-Mood Scale (TMMS),

dispositional optimism-pessimism was measured using the six-item (plus four filler items) Life Orientation Test-Revised (LOT-R), stress was measured using the 14-item Perceived Stress Scale, and life satisfaction was measured using the five-item Satisfaction With Life Scale (SWLS). Hierarchical regression analyses were used to examine the predictive utility of perceived emotional intelligence for variance in life satisfaction and stress beyond that accounted for by dispositional optimism-pessimism. This meant, in the first instance, establishing to what extent dispositional optimism-pessimism accounted for the variance. The overall model explained 21% of the variance in stress. They found optimism-pessimism accounted for 15%, and also that participants who reported higher optimism, as well as perceived skill at distinguishing between and also repairing their own mood, reported lower scores on perceived stress. With regard to life satisfaction, the model explained 14% of the variance, with optimism-pessimism found to account for 9% - almost two-thirds – of that amount. As with stress, higher scores in optimism and a greater capacity at distinguishing between and repairing moods predicted higher life satisfaction scores.

Patton et al. (2011) conducted a prospective study in Australia looking at to what extent optimism impacts on health risks associated with adolescence. This three-wave longitudinal study saw 50 schools recruited and separated into 25 paired sets, matching for socioeconomic status, enrolment size, and education sector (government, Catholic, and independent), with all but two of the selected schools choosing to proceed. The study involved 5,634 participants, aged 12 to 14 years at first point of contact (mean age: 13.1, females: 53%), with follow-up data collected over the course of the next two school years. At each wave, participants were assessed for depressive symptoms (CES-D), anxiety symptoms (eight-item scale adapted from the Spence

Children's Anxiety Scale), substance use (self-report of frequency of tobacco, alcohol, and cannabis use), anti-social behaviour (five items from the Self-reported Early Delinquency Scale), optimistic thinking style (12-item scale developed to reflect Beck's cognitive triad), interpersonal competence (a modified version of the Adolescent Interpersonal Competence Questionnaire), negative coping style (Coping Actions Scale), and life events over the previous 12 months (an adapted version of the List of Threatening Experiences Questionnaire). In analysing the relationship between optimism and health risks, the researchers opted for logistic generalised estimating equations. At baseline, it was found that higher levels of optimism corresponded to lower levels of depression, anxiety, substance use, and anti-social behaviour, with this trend holding up through waves two and three. They reported significant interactions between optimism and sex on all outcome measures, with the exception of anxiety. It was found that optimism had a strong protective association for depression, with the degree to which this was the case varying between males and females. When compared with females who reported very low levels of optimism, males reporting similar scores were found to be approximately half as likely to be depressed, with the risk of depression for both males and females decreasing as optimism levels increased. Males had a lower risk of depression at each level of optimism, but higher optimism reduced the risk for depression among both males and females. The authors suggested that promoting optimism, as well as other positive aspects of emotional and psychological styles, can prove useful in promoting mental health. It was also noted that this usefulness may be enhanced if an intervention seeks to address risk and protective factors in an adolescent's social context.

Nes and Segerstrom (2006) conducted a meta-analysis looking into the relationship between dispositional optimism and coping. The researchers included 50 independent studies in their analysis – 26 cross-sectional and 24 prospective designs. The total number of participants was 11,629. They found that dispositional optimism was positively associated with approach coping strategies (i.e., promoting behaviours geared towards facing stressors or negative emotions, with a view towards eliminating, reducing, or managing them) and negatively associated with avoidance coping strategies (i.e., ignoring, avoiding, or withdrawing from stressors or negative emotions). Their findings also indicated that optimists may adjust coping strategies in line with the specific stressor they are faced with, with this adroitness linked to positive outcomes.

In a review of the causes and consequences of optimism, Forgeard and Seligman (2012) outlined the benefits of optimism as it relates to SWB. Noting that it has been linked to a number of positive consequences, they pointed to findings linking optimism with better life adjustment, fewer depressive symptoms, more life satisfaction, and higher levels of SWB, even in the context of stressful life events, e.g., childbirth and cancer treatment.

Daukantaite and Bergman (2005) investigated the role played by optimism early in life for SWB in adulthood. The study was based on data gathered from 248 females at age 13 and then at age 43 during the course of a longitudinal individual development and adaptation project undertaken in Sweden. At age 13, optimism was measured using the Attitude to the Future scale; while at age 43, global life satisfaction was assessed by a four-item measure (e.g., ‘How do you like your current life?’), positive

and negative affect were measured using a Swedish translation of the PANAS, and optimism was assessed using a translated version of a five-item scale (the Psychological Immune System Inventory). Data were analysed using structural equation modelling, and the authors reported that the best fitting model suggested that early optimism influences later optimism in adulthood, with later optimism impacting directly on global life satisfaction. They also reported that optimism at age 13 was the only factor among those measured to be consistently related to SWB at age 43.

5.3 Self-efficacy

Self-efficacy rose to prominence in psychology in the late-1970s and has continued to be a focus of much research attention since that time. Albert Bandura has become synonymous with the area, and was the first researcher to develop a formal theory around the ideas surrounding self-efficacy (1977). He conceived of self-efficacy as relating to individual beliefs about the ability to achieve success in given domains, with those beliefs then influencing levels of effort and persistence brought to bear on a task and reactions to obstacles met. Writing almost two decades later, Bandura (1994) defined self-efficacy as individual beliefs about “their capabilities to produce designated levels of performance that exercise influence over events that affect their lives” (p. 71). In line with this definition, Bandura (1994) stated that people with high perceived self-efficacy approach difficult tasks as challenges to be overcome, rather than threats to be avoided. When people with high self-efficacy experience setbacks, they continue to strive, and in the event that they experience failure, they tend to rationalise it as being owed to insufficient effort or skills, explanations that suggest the obstacles can be overcome at a future time if they improve the relevant skills and commit to greater application. However, people with low perceived self-efficacy will

doubt their capacity to achieve in certain domains and therefore opt not to pursue courses of action where they expect to meet a challenge/threat. Bandura (1994) characterised people with low self-efficacy as having low aspirations and exhibiting weak commitment to the goals they choose to pursue. When faced with difficulties, they focus on their own perceived shortcomings and potential adverse outcomes associated with the challenge, rather than directing their attention to overcoming obstacles. They view poor performance as being synonymous with deficient aptitude. Therefore, it requires only relatively little exposure to failure to make them lose faith in their capabilities. Against this backdrop, Bandura (1994) stated that such individuals are at risk for stress and depression.

Maddux (2005) noted that while the term self-efficacy itself is relatively new, it was not Bandura's focus on the topic itself that distinguished his work. Instead, it was the formalising of the notion of perceived competence as self-efficacy and the proposal of a theory on how it develops and influences human behaviour that made Bandura's research stand out in the late-1970s. Maddux adds: "The essential idea was not new; what was new and important was the empirical rigor with which this idea could now be examined" (p. 278).

Bandura (2004) addresses self-efficacy in the context of social cognitive theory. This theory is rooted in an agentic perspective, and identifies four core features of human agency: intentionality, forethought, self-reactiveness, and self-reflectiveness. According to this theory, during the course of daily life individuals will form intentions, including action plans and strategies which it is anticipated will help realise those intentions. For Bandura, the efficacy belief system is the foundation of

agency in humanity. Elaborating on this, he explained that belief is key to action, in that if people do not believe their actions will produce the desired effects, they are left with little incentive to act or persist in the face of adversity. He acknowledged that other factors may act as motivating forces, but that whatever these factors are “they are rooted in the core belief that one has the power to effect changes by one’s actions” (p. 622), and therefore perceived self-efficacy should be regarded as the overriding element.

Scheier and Carver (1987) note that self-efficacy theory is conceptually related to their model of optimism-pessimism. They highlight that one of the key differences between the respective approaches is that while the optimism-pessimism model allows for external circumstances as well as personal self-efficacy to influence decisions around effort, persistence, and disengagement, Bandura, as they see it, focuses exclusively on self-efficacy, thus ruling out other potential factors such as environment or religious faith. Scheier and Carver (1993) state that while self-efficacy theory makes personal agency paramount, their approach makes a point of de-emphasising the role of personal efficacy. They also note another key difference – self-efficacy theory stresses the domain-specific nature of behaviour, while the dispositional optimism model stresses generalised tendencies across a range of settings.

Maddux (2005) states that one of the best ways to make clear how self-efficacy should be considered is to distinguish it from related concepts. With that purpose in mind, he goes on to make a series of points illustrating what it is and what it is not. He states that self-efficacy should not be thought of as a perceived skill; instead, it relates

to what an individual believes they can do with skills they possess under certain conditions. Self-efficacy beliefs should not be regarded as predictions about behaviour. The point is not for someone to outline what they believe they will do in a given situation, more to establish what they believe they can do – with the two not necessarily always going to overlap. Maddux also distinguishes between self-efficacy and self-esteem, noting that self-esteem is what an individual believes about themselves and how that makes them feel, whereas self-efficacy beliefs in a given domain will only impact upon self-esteem in direct proportion to the extent that the domain in question is deemed important. He also points out that self-efficacy should not be categorised with motive, drive, or a need for control, as an individual could feel any or all of those three things while still holding weak efficacy-related beliefs for that domain.

With regard to sources of self-efficacy, Bandura (1994) points to four main influences – mastery experiences, social modelling, social persuasion, and physical and emotional states. He bills mastery experiences as the most effective means of building strong self-efficacy. For these purposes, mastery is not merely equated with success. While he states unambiguously that successes build personal beliefs around self-efficacy, if those beliefs are to be durable, then some measure of struggle along the way is essential. Further elaborating on this point, he states that easy successes instil an expectation of quick results, and this tendency can lead to discouragement in the face of failure. True mastery necessitates overcoming obstacles along the way to securing a hard-fought success. The influence of social models is found in observations of people deemed similar to the individual in question succeeding through the application of sustained effort. Witnessing such events encourages the

individual to believe that they can also master comparable activities. Social persuasion is seen when people are persuaded verbally that they have the means within them to master specified activities, with this then likely to lead to greater effort being used. However, Bandura also states that it is easier to undermine beliefs than enhance them with this approach. On physical and emotional states, Bandura points to how people can judge their capabilities when 'reading' their own feelings and moods. People can interpret stress reactions and tension as signs that they are vulnerable to poor performance.

In the more than 35 years since Bandura first detailed his empirically-driven perspective on self-efficacy, a large body of literature has built up, looking at various aspects surrounding the construct, and examining issues arising from high and low self-efficacy among a variety of age groups and social circumstances.

Vecchio, Gerbino, Pastorelli, Del Bove, and Caprara (2007) examined a number of variables, including multi-faceted self-efficacy beliefs, in predicting life satisfaction five years on from initial data collection among an adolescent population in Italy. The researchers initially worked with a participant population of 650 adolescents as part of the study – 317 males and 333 females. At initial data collection, the average age was 13.5 years and at T2 18.5 years. At T1, all participants were enrolled in middle school, while at T2 86.5% of participants attended high school, with the remainder in employment. It was also reported that 75% of T1 participants completed the assessment at T2. Measures of perceived academic, social, and regulatory self-efficacy beliefs were taken at T1, along with measures of academic achievement and social preference. Five years on, at T2, the self-efficacy beliefs measures were taken

again, with the changes between the scores calculated by subtracting mean values at T1 from mean values at T2. Academic achievement data was sourced from school records, social preference was assessed by sociometric peer nominations (social preference in this context relating to the choices made by participants when asked to select three classmates with whom they would like to study, and then three with whom they would prefer not to study, and also three with whom they would not want to play), and life satisfaction was assessed using the SWLS. Arising from differences found between males and females on self-efficacy over time, with females tending to fare better, subsequent correlation analyses were conducted separately for both sexes. The authors found support for the contention that adolescent self-efficacy beliefs can be long-term predictors of life satisfaction. They reported that young people who initially regarded themselves as more capable of regulating academic activities and managing interpersonal relationships self-reported higher levels of life satisfaction at T2. Academic self-efficacy beliefs tended to decrease across time, in line with schoolwork becoming more challenging, but it was posited that this may reflect young people developing more accurate judgements of their own abilities, as opposed to experiencing decreases in those abilities. It is suggested that the same logic applies to perceived social efficacy, with social relationships becoming more complex as individuals move from early adolescence to early adulthood, and the social comparisons involved in this process assisting individuals in making more accurate self-assessments. Participants whose self-reports indicated a lower decline in academic and/or social self-efficacy between T1 and T2 tended to be more satisfied with their life at the later point.

Bandura, Pastorelli, Barbaranelli, and Caprara (1999) examined how different aspects of perceived self-efficacy operate within a network of sociocognitive influences in childhood depression. The initial phase of this longitudinal study, which was conducted in Italy, involved 282 participants (148 males, 134 females, mean age: 11.5 years). Perceived self-efficacy was measured using 37 items representing seven relevant domains of functioning – self-efficacy for academic achievement, self-regulation of learning, group leisure and extracurricular activities, resisting peer pressure to engage in high-risk activities, perceived social self-efficacy, self-assertive efficacy, and meeting the expectations of others. A principal-components factor analysis with varimax orthogonal rotation of this data offered a three-factor structure – perceived academic self-efficacy, perceived social self-efficacy, and perceived self-regulatory efficacy. Data on social behaviour was gathered from a number of different sources, e.g., participants, peers, and teachers, with assessments based on personality questionnaires, behaviour ratings, and peer sociometric ratings. Participants self-reported on their pro-social behaviour using a 10-item scale assessing helpfulness, sharing, kindness, and co-operativeness. Teachers rated participants using six items from the larger scale. Peer assessment was based on classmates being presented with booklets containing the names of all class members, with each young person asked to select three classmates who often share things, help others, and offer comfort when they are sad. Problem behaviour was measured using 85 items from the Child Behavior Checklist, academic achievement was measured by teachers grading performance in various subjects mid-year and at the end of the academic term. Depression was assessed using the 27-item Children's Depression Inventory, and also by teachers and peers, via 10-item and three-item scales respectively. Conducting analyses using a multiple groups model approach, the authors reported that low sense

of social self-efficacy and academic self-efficacy tended to be accompanied by high depression both initially and one year later, with these two forms of perceived self-efficacy also contributing to depression through their impact on pro-socialness and problem behaviour. Another notable finding was that it was participants' perceived self-efficacy as opposed to their actual academic performance that accounted for depression both initially and over time, thus indicating the power over mood that can be exercised by self-efficacy related beliefs.

Caprara, Gerbino, Paciello, Di Giunta, and Pastorelli (2010) conducted a prospective study examining the influence of affective and interpersonal social self-efficacy beliefs on depression and delinquency among adolescents in Italy. Four hundred and fifty-two participants (227 females) completed questionnaires on four occasions across seven years – T1 mean age: 12.81, T2 mean age: 13.81, T3 mean age: 15.83, and T4 mean age: 19.80. At T1-T3, all participants attended school, while at T4, 53% attended school, 24% were college students, 15% were in the workforce, and 7% were unemployed, while 81% of the original sample was retained at T4. Self-report measures were used to assess a number of variables, including self-regulation problems at T1 (Emotional Instability Scale), exposure to family violence at T2 (one-item from the Violence Scale), self-efficacy beliefs at T3 (the Regulatory Emotional Self-Efficacy Scale, the Filial Self-Efficacy Scale, the Empathic Self-Efficacy Scale, and the Resistive Regulatory Self-Efficacy Scale), depressive symptoms at T3 and T4 (CES-D), and delinquent behaviour at T3 and T4 (Achenbach Delinquency Scale). The authors reported that multi-group structural equation modelling was performed on the data, with a view towards examining across sex the influence of the various forms of self-efficacy on depressive symptoms and delinquent conduct both concurrently

(T3) and four years later (T4), while controlling for self-regulation (T1) and exposure to family violence (T2). Correlations showed that depression at T3 and T4 was negatively related to self-efficacy to varying degrees - self-efficacy in managing negative emotions (T3: $r = -.35$, $p < .001$; T4: $r = -.27$, $p < .001$), and filial self-efficacy (T3: $r = -.49$, $p < .001$; T4: $r = -.25$, $p < .001$). Overall, the authors reported that self-efficacy beliefs in middle adolescence influence depression both concurrently and longitudinally, noting that a significant and direct path had been detected from self-efficacy to manage negative emotions to concurrent depression.

Caprara, Steca, Gerbino, Paciello, and Vecchio (2006) examined the concurrent and longitudinal impact of self-efficacy beliefs on SWB among Italian adolescents. For these purposes, SWB was characterised as positive thinking and happiness, with the former operationalised as a latent dimension underlying life satisfaction, self-esteem, and optimism, and the latter as the difference between daily-experienced positive and negative affect. The study was conducted with 664 participants (females = 342, males = 322; mean age at baseline = 16.73), all of whom completed measures of affective self-efficacy beliefs and interpersonal-social self-efficacy beliefs at T1, along with the Rosenberg Self-Esteem Scale (RSES), LOT, SWLS, and PANAS at T1 and T2 (two years later). Analysing the data, the authors opted for a structural equation modelling approach, in which self-efficacy beliefs were used as predictors of positive thinking and happiness, both concurrently and longitudinally. They found that higher perceptions among adolescents on their ability to regulate positive and negative affect were related to higher levels of self-efficacy beliefs. Positive thinking at T2 was found to be significantly influenced by social self-efficacy beliefs, while happiness was affected by perceived self-efficacy in managing positive affect and also relationships

with parents. The authors concluded that adolescents' self-efficacy beliefs relating to managing positive and negative emotions, as well as interpersonal relationships, contribute to the degree to which individuals are likely to have positive expectations about the future, feel a greater sense of life satisfaction, and experience more positive emotions.

5.4 Resilience

Fergus and Zimmerman (2005) stated that the concept of resilience refers to the process of overcoming the negative effects of being exposed to specific forms of risk, successful coping with traumatic experiences, and avoiding negative trajectories associated with a range of different risk factors. They also stress that resilience theory is inherently positive in its focus. While it is concerned with risk exposure, its emphasis is on the strengths that assist individuals in overcoming those risks, rather than the deficits that hinder efforts to respond effectively to life difficulties and adversities. The primary focus of resilience theory is to strive to understand healthy development in the face of risk exposure.

Masten and Reed (2005) offered an overview of the history of the study of resilience in psychology, noting that when the discipline began to develop in the 19th and early 20th centuries, attention was devoted to individual adaptation to the environment, with resilience-related ideas evident in natural selection and psychoanalytic ego psychology. The authors point to criticisms of the emphasis on negative aspects of individual differences among children reported in the early 1960s as indicative of a coming shift in emphasis, which became more apparent in the 1970s when "the systematic study of resilience in psychology emerged from the study of children at

risk for problems and psychopathology” (p. 75). They noted that when researchers began to look specifically in this direction they found evidence to suggest that there were children in high-risk categories for problems who were actually developing quite well.

Masten (2001) notes that initially it was thought that young people exhibiting resilience and overcoming risk factors present in their life were somehow exceptional, with words like ‘invulnerable’ and ‘invincible’ used in association with them. However, she points out that it subsequently became apparent that the most striking aspect of resilience was the extent to which it was widespread, and not its manifestation in select cases. She states that the capacity for exhibiting resilience appears to reside in basic human adaptational systems. Masten outlines the point of view that if these systems are protected and functioning well, then individual development will be robust, even in the face of severe adversity; however, she adds that if there is impairment prior to or arising from adversity, then the risk for problems in development becomes much greater. She adds that these risks become particularly more pressing if the environmental hazards are prolonged.

Different views have been expressed by various researchers on the point of what constitutes an at-risk group. This is important to consider since, as stated previously, risk goes to the heart of resilience, with the latter manifesting as a response to the former. While Masten (2001), Masten and Reed (2005), Fergus and Zimmerman (2005), and others writing in this area stress the importance of specifically identified at-risk groups and individuals, Davey, Eaker, and Walters (2003) examined resilience among a sample of adolescents they described as being relatively risk-free. They

justified this approach on the basis that progressing through adolescence in of itself constitutes a challenge to the individual, and in developmental terms is a time of risk. They maintained that in conceiving of adolescence in these terms it corresponds to the pre-requisite that normative adversity be present before we can expect to see resilience expressed in a given population. This distinction is important in the context of the current research, as the initial survey targeted a universal population of school-based adolescents, with no pre-screening to assess whether the participants were in a formal at-risk category. For this research, adolescence itself is regarded as the challenge facing participants, and resilience was assessed with that in mind.

Tugade and Fredrickson (2004) used a multi-method approach in three studies, with a view towards confirming the prediction that resilient people use positive emotions to rebound from and find positive meaning in stressful situations. In the first and second studies, the researchers used psychophysiological methods to explore the emotion regulatory processes linked with psychological resilience, while the third study examined naturally occurring stressors to assess the extent to which positive emotions may assist the coping process. Study 1 involved 57 United States-based undergraduate students (74% female), aged 17 to 40 ($M = 19.26$, $SD = 2.96$). A negative emotion state was induced by asking participants to mentally prepare a speech and then telling them to look into a video camera and speak clearly. It was also said that the tape would be shown to peers for evaluation. However, none of the participants actually delivered their speech. Psychological resilience was measured using the 14-item Ego-Resiliency Scale. Positive and negative ambient mood was assessed using a 38-item version of the PANAS. Emotion reports were used to assess subjective experiences during the experimental session. Cognitive appraisal of the speech preparation task

was undertaken by asking participants how threatened and/or psyched up the task made them feel. Also, cardiovascular readings were taken throughout the process. To test the connection between resilience and positive emotionality, the authors examined self-reported positive and negative ambient mood, and subjective reports in response to the speech preparation task. Controlling for sex, they found that trait resilience was positively associated with positive mood ($r = .38, p < .01$). With regard to resilience and threat appraisal, higher trait resilience was associated with lower appraisals of threat ($r = -.31, p < .05$). Study 2 also had 57 participants (49% female), aged 18-22 years ($M = 18.96; SD = .97$). These participants also received instructions around a speech preparation task, but were given either challenge or threat instructions, with participants receiving the former told that the task would be difficult but to think of it as a challenge to be met and overcome, while the latter set of instructions stressed difficulty and the importance of performing as efficiently as possible, without reference to overcoming challenge. The measures used were the same as in study 1 with the exception of blood pressure. Examining the relationship between trait resilience and self-reported cognitive appraisals of challenge and threat, the authors found resilience to be positively related to self-reports of challenge (psyched-up) ($r = .35, p < .01$) and negatively related to self-reports of threat ($r = -.28, p < .05$). With regard to appraisals, resilience, and positive emotionality, the authors predicted that participants assigned to the threat condition and with higher trait resilience would report greater positive emotionality compared to participants with lower trait resilience. To test this, they examined the relationship between trait resilience and subjective emotion reports in response to the speech preparation task, for threat condition participants. They found that higher trait resilience was associated with increases in three positive emotions: eagerness ($r = .44, p < .05$), excitement ($r =$

.44, $p < .05$), and happiness ($r = .47$, $p < .05$). Analysis of data from challenge condition participants also indicated that higher trait resilience was associated with increases in three positive emotions: eagerness ($r = .55$, $p < .01$), excitement ($r = .41$, $p < .05$), and interest ($r = .40$, $p < .05$). Study 3 looked at the degree to which positive emotions are associated with resilient individuals' ability to interpret a positive meaning during negative circumstances. They predicted that high-resilient participants would experience greater positive emotionality and would be more likely to find positive meaning in negative circumstances. It was also predicted that experiencing positive emotions would mediate the effect of psychological resilience on positive-meaning finding. This study involved 192 undergraduate students (65% female, mean age: 18.89, SD: .95, age range: 18-23). The same measures were used as in the previous studies, but participants were also asked to write an essay about current life problems, answered a number of open-ended questions about those problems, and then completed the Coping Responses Inventory, with a view towards assessing the extent to which they found positive meaning in the problem. For resilience and positive emotionality, the authors looked at self-reported ambient mood and subjective reports offered in response to the problems described by participants. Analysis of the emotion reports indicated that higher resilience was associated with increases in four positive emotions: eagerness ($r = .17$, $p < .05$), excitement ($r = .19$, $p < .05$), happiness ($r = .21$, $p < .05$), and interest ($r = .18$, $p < .05$). When testing the hypothesis on resilience and finding positive meaning, a Pearson product-moment correlation showed that the composite index of positive emotionality was positively correlated with the index of positive-meaning finding ($r = .35$, $p < .0001$). Higher trait resilience was associated with greater positive-meaning finding ($r = .27$, $p < .001$).

Cohn, Fredrickson, Brown, Mikels, and Conway (2009) tested the theory that positive emotions help people build lasting resources by measuring emotions on a daily basis over a period of one month among 120 university undergraduates (females = 59.8%, mean age = 18.7 years), and assessing life satisfaction and resilience at the beginning and end of that period. Resilience was assessed using the Ego Resiliency 89 measure, life satisfaction was measured using the SWLS, and emotions were measured by submitting daily ratings on the experience of 18 emotions via the internet. Among the hypotheses tested by the authors were that daily positive emotions would predict increases in resilience and life satisfaction and that the relation between positive emotions and increased life satisfaction would be mediated by increased resilience. Cohn et al. reported that the first of these hypotheses was supported by the analysis, with significant findings reported both at baseline and one month later on correlations between positive emotions and resilience (T1: $r = .32$, $p < .01$; T2: $r = .45$, $p < .001$) and between positive emotions and life satisfaction (T1: $r = .27$, $p < .01$; T2: $r = .36$, $p < .001$), and that effect sizes were in the medium-to-large range. With regard to the second hypothesis, the authors noted that positive emotions predicted change in life satisfaction ($\beta = .15$, $p = .03$), and then sought to determine whether this related specifically to building resources by testing change in ego resilience as a mediator. For the purposes of their analysis, T2 life satisfaction was treated as the outcome and T1 life satisfaction as a predictor, with the logic behind this approach being that semi-partial correlations of other variables with T2 SWLS scores would predict variance above and beyond those predicted by T1 levels. Positive emotions were used as an additional predictor, with change in resilience as a mediator. Cohn et al. reported that when paths through all predictors were taken into account, the direct path from positive emotions to change in life satisfaction became non-significant ($\beta = .08$, $p =$

.22), but the indirect route through change in resilience was significant ($\beta = .05$, $p < .01$). The authors stated that this indicated that the relationship of positive emotions to changes in life satisfaction was “fully mediated by change in resilience” (p. 364). They further suggested that happy individuals may become more satisfied with life not just because they feel better in a given moment, but because they develop resources for living well.

Flett and Hewitt (2013) make the case for the development and unrolling of in-school resilience programmes with a view towards tackling the high prevalence of psychological disorders known to exist among young people. They make a case for the urgency of such programmes by suggesting that the true level of distress and dysfunction in young people is being underestimated due, in part, to the presence of subthreshold conditions not meeting diagnostic criteria. The authors stress that while subthreshold conditions fall short of meriting a formal diagnosis, they can still cause serious distress and impairment for young people experiencing them. Flett and Hewitt also suggested that the true level of psychological impairment among adolescents is further obscured by what they term as disguised distress. They link this to a personality style characterised by “an extreme unwillingness to let others know about their levels of distress” (p. 5). The authors make a connection between this style and disguised/smiling depression, where individuals suffering sometimes acute distress can project a false portrayal, either of health or of distress far below the levels they are actually experiencing. Flett and Hewitt stress the need for in-school resilience-based prevention programmes to target key vulnerability factors such as perfectionism, self-criticism, and pessimism, while also finding ways to help adolescents who suffer in silence. A fundamental aspect of such programmes would

also be to incorporate a positive perspective, seeking to promote coping and problem-solving skills, while also emphasising concepts such as hope, optimism, and self-compassion.

With this research highlighting the idea of adolescents suffering in silence, we can see a clear potential benefit from a universal school-based cognitive intervention.

Individuals with subthreshold conditions or personality types that see them conceal psychological distress could slip through the cracks in a targeted intervention. While there are no guarantees that such individuals would consent to take part in a universal study, it could be argued that extending the net in this way could lead to beneficial outcomes.

5.5 Self-esteem

Rosenberg and Pearlin (1978) describe self-esteem as a psychological outcome reflecting a global positive or negative attitude towards the self. This outcome arises from a number of internal cognitive processes, including social comparisons, reflected appraisals, self-perception, and psychological centrality. With regard to social comparisons, they state that in the absence of reliable objective means to evaluate our opinions, our beliefs in our own abilities, and our sense of social identity, we look around our environment for others with whom to compare ourselves and form positive or negative opinions about ourselves and our individual circumstances arising from that. The theory of reflected appraisals contends that how people come to see themselves is partly influenced by how we perceive others as seeing us, with positive perceptions from others potentially boosting self-esteem, while sensing negative external appraisals can have the opposite effect. Self-perception relates to how

individuals perceive the success or failure of their own actions in achieving goals or exhibiting skill or talent. The term psychological centrality relates to self-concept, which Rosenberg and Pearlin describe as being made up of disposition and social identity elements. The authors state that some elements of an individual's self-concept will be at the centre of attention and others will be more peripheral, while some self-values will be regarded as being of critical importance and others deemed relatively trivial. From this, they conclude that the impact of any component on global self-esteem will depend upon its relative importance and centrality in the cognitive structure of an individual.

Theorists have made a number of distinctions between different types and aspects of self-esteem in the literature over the years. Greenwald and Banaji (1995) highlighted the distinction between explicit and implicit self-esteem. While explicit self-esteem relates to conscious awareness, implicit self-esteem refers to an experiential sense of the self, operating on an automatic, intuitive level not readily accessible to conscious processes. Franck, De Raedt, and De Houwer (2007) examined the relationship between both conceptions of self-esteem and depressive symptomatology in a Dutch sample. This research was conducted with 95 participants, including males and females – currently depressed ($n = 28$, mean age: 39.6 years), formerly depressed ($n = 34$, mean age: 43.8), and never depressed controls ($n = 33$, mean age: 45.3). Participants were first assessed using the mini-international psychiatric interview. Then, they completed measures of depressive symptoms (BDI-II), global self-esteem (RSES), and implicit self-esteem (Name Letter Preference Task), while another measure of depressive symptoms (Hamilton Rating Scale for Depression) was completed at the end of this process. Six months on, never depressed controls and

formerly depressed participants were contacted and invited to complete the BDI-II again. The researchers found that currently depressed individuals reported lower levels of explicit self-esteem when compared with formerly depressed participants and never depressed controls, while all three groups showed similar positive levels of implicit self-esteem. Arising from their findings, they suggested that implicit self-esteem might be linked with ideas relating to an ideal self, while explicit self-esteem may be grounded in a conscious awareness of the actual self. It is the actual self we are concerned with in this research. The emphasis here is on looking to enhance SWB and reduce depressive symptoms. With regard to deciding which characterisation of self-esteem is most suitable for these purposes, it is felt that the conscious awareness inherent in explicit self-esteem makes this construct a better fit.

Kernis (2003) identifies self-esteem as an important psychological construct owing to the fact that it constitutes a central component of people's daily experience, the way we feel about ourselves, with the various ways in which we conceive of ourselves going on to influence our transactions with the environment and other people we encounter and interact with within it. He also distinguishes between high self-esteem and optimal self-esteem, drawing a distinction based on the contention that high self-esteem can be fragile or secure depending upon to what degree it is defensive or genuine, contingent or true, unstable or stable, and discrepant or congruent with implicit feelings of self-worth, while optimal self-esteem embodies all the positive characterisations associated with high self-esteem without any of the negative possibilities.

Crocker and Park (2004) highlight concerns associated with pursuing, possessing, and then maintaining high self-esteem. They point to suggestions that high self-esteem, far from being an indisputably positive trait, may not yield as many benefits as heretofore thought. They state that research findings suggest that while high self-esteem produces pleasant feelings and enhanced initiative, these benefits do not follow through to high academic achievement and strong job performance. For Crocker and Park, the key is not whether self-esteem is high or low, but instead the importance of the construct relates to how people strive for it. They suggest that the overt pursuit of the confidence and initiative associated with high self-esteem can come at a price, with detrimental impacts on learning, relatedness, autonomy, and self-regulation, and eventually, mental and physical health.

Despite concerns such as these, there is a wide body of literature highlighting the important role that self-esteem can play in healthy psychological functioning throughout the lifespan.

Birkeland, Melkevik, Holsen, and Wold (2012) analysed longitudinal data collected at a number of moments over 17 years in Norway to examine trajectories of global self-esteem development during adolescence. The original sample size was 927 with a mean age of 13.3 years. As new students joined the relevant classes, they were invited to become participants. This brought numbers up to 1,242. Attrition over time saw participant numbers eventually drop to 1,083 (53% females). In the early years of the study, questionnaires were completed in school, while in later years packets were posted out to participants, always around the same time of year. Global self-esteem was measured using a revised version of the RSES, the six-item Global Negative Self-

Evaluation Scale. Depressed mood was measured at age 13 and again at age 30, using a seven-item scale that was found to correlate well with the CES-D. Life satisfaction at age 30 was assessed using the SWLS. Researchers also looked at socio-economic status, body image, leisure-time physical activity, relations with parents, relations with peers, insomnia, and somatic complaints. Initial analyses showed that mean global self-esteem increased during adolescence. Identifying a conventional single-class latent growth curve for the development of global self-esteem from age 14 to 23, it was found that the observed mean was fairly stable, recording a slight increase – with an interclass correlation of .52. This suggests that global self-esteem appears to have remained relatively stable among participants during this nine-year period. Using growth mixture modelling, the authors identified three classes – 87% of participants had a consistently high and somewhat increasing trajectory of global self-esteem, 5.5% reported a chronically low and somewhat decreasing trajectory, while 7.5% were judged to best fit a U-shaped trajectory, with a turning point at age 18. The consistently high class reported significantly higher levels of life satisfaction compared to the other two groups, while scores on depression varied significantly between all three classes, with the group consistently reporting the highest self-esteem showing lowest depressed mood and the U-shaped group the highest. With regard to the U-shaped group, the authors suggested that even though self-esteem levels increased beyond 18 years, because they experienced more negative outcomes than the consistently high group by age 30 it may be that relatively low self-esteem during adolescence can have negative long-term consequences. Findings such as this highlight the importance of seeking to cultivate well-being and prevent mental health problems during the adolescent years.

Baumeister, Campbell, Krueger, and Vohs (2003) conducted a review of empirical findings with the intention of establishing whether self-esteem is a cause of important consequences in life. While they questioned the extent to which high self-esteem can benefit academic performance or occupational success, they found support for the contention that high self-esteem has a strong, positive relation to happiness, and that low self-esteem can be a risk factor for depression in certain circumstances. However, they also stressed that high self-esteem can be associated with potentially negative outcomes, noting that it has not been found to prevent young people from drinking alcohol, smoking, taking drugs or engaging in early sex, and in fact might be associated with an increased willingness to engage in experimentation. They concluded that the benefits of high self-esteem seem to fall into two categories – enhanced initiative and pleasant feelings. However, they also stressed that their findings did not support the view that successfully attempting to boost self-esteem in individuals will by itself lead to improved outcomes.

5.6 Cognitive-behavioural interventions in the school setting

As detailed in this chapter, research indicates that how adolescents perceive themselves in relation to various cognitive constructs can have wide-ranging implications – both positive and negative – for mental health and well-being. Arising from this recognition among researchers, cognitive-behavioural group intervention programmes are becoming more common in school settings. Horowitz and Garber (2006) outlined how these programmes tend to fall into one of three categories - universal preventive interventions (administered to the entirety of a target population), selective prevention programmes (given to members of an at-risk sub-group within a larger population), and indicated preventive interventions (provided to individuals

exhibiting subclinical signs or symptoms of a particular disorder). One of the main strengths associated with universal approaches is that potential stigma is avoided, as no individuals are singled out for inclusion. Selective approaches tend to be made up of diverse samples and this can lead to more varied programmes targeting multiple outcomes aside from reducing depression. Indicated interventions can be more cost- and time-consuming, given that there is a pre-screening process involved in participant selection, but an associated upside is that those eventually recruited will be the most likely to benefit from a depression prevention programme.

One of the most well-known cognitive-behavioural interventions used in school settings is the Penn Resiliency Program (PRP). Seligman et al. (2009) discuss the PRP against the backdrop of asking whether well-being can be taught in schools.

Highlighting that studies over two decades have exposed more than 2,000 young people aged 8 to 15 to the programme, the authors state that the primary goal of the PRP curriculum is to enhance students' ability to cope with daily stressors and problems that are common in adolescence. They add that PRP seeks to promote optimism by helping students think in more realistic and flexible ways about the problems they face in life, and also seeks to promote other coping and problem-solving skills, e.g., assertiveness, decision making, and relaxation. Gillham et al. (2007) outline how the PRP is normally delivered over 12x90-minute sessions in which participants learn about the connections between beliefs, feelings, and behaviours, cognitive styles (e.g., pessimistic explanatory styles), and cognitive restructuring techniques (i.e., challenging negative thinking by evaluating the accuracy of beliefs and considering alternative interpretations).

Brunwasser, Gillham, and Kim (2009) conducted a meta-analytic review of the PRP's effect on depressive symptoms. They identified 17 controlled evaluations of the programme published between 1990 and 2009 in which depressive symptoms had been measured, offering an overall pool of 2,498 participants, with an age range of 8 to 18 years. They noted that some form of random condition assignment (e.g., at participant, classroom, or school level) was used in most studies ($k = 14$; $n = 2,281$). Three of the studies offered data only at baseline and immediate post-intervention, while others tracked the effects of the intervention for as many as three years. It was also noted that 11 of the studies used a targeted approach, while six were universal in terms of participant recruitment. In four of the 17 studies, the PRP was compared with both a no-intervention control condition and an active control condition, while in 16 of the studies depressive symptoms were assessed using the CDI, with two studies using both this measure and the RADS, and one used the Depression Self-Rating Scale. Effect sizes in the analysis were estimated by dividing the difference in control group and PRP group mean depressive symptoms scores by the standard deviation of the control group, with positive d values indicating lower scores among PRP groups compared to control participants. The authors reported significant mean effect sizes when comparing PRP and no-intervention control condition depressive symptoms scores at immediate post-intervention ($d = .11$, 95% CI [.01, .20]; ESs ranged from -.61 to .59) and also over time, from six- to eight-months ($d = .21$, 95% CI [.11, 0.31]; ESs ranged from -.06 to .69), and at 12-month follow-up ($d = .20$, 95% CI [.09, 0.32]; ESs ranged from -.10 to .61). At post-intervention, PRP groups averaged .86 points less than control participant on the CDI. At six- to eight-months follow-up, PRP groups reported lower depressive symptoms scores relative to control groups in 12 of the 13 studies, with an average benefit of 1.75 points on the CDI. At 12 months, PRP

groups reported fewer depressive symptoms than control groups in nine out of 10 studies, on average scoring 1.56 points lower on the CDI. The authors concluded that the evidence indicated that the PRP has enduring effects on depressive symptoms. While they maintained that this was an encouraging finding, it was also acknowledged that the average effects seen were small.

Horowitz and Garber (2006) conducted a meta-analysis on 30 studies of approaches designed to prevent the onset of depressive symptoms among children and adolescents – 12 universal, 9 selective, and 9 indicated. They found that selective prevention programmes (mean effect size = .30) tended to be more effective than universal programmes at immediate post-intervention (mean effect size = .12), while both selective (mean effect size = .34) and indicated prevention programmes (mean effect size = .31) were more effective than universal programmes (mean effect size = .02) at follow-up. Distinguishing between prevention and treatment, they stated that a prevention effect required an increase in depressive symptoms among the control group coupled with no increase or a lower rate of increase among the intervention group. They noted that none of the universal interventions analysed met the first criterion, with depression scores for both groups tending to be static over time, a point noted as being consistent with the effect sizes calculated. They noted that in one universal prevention study a moderate effect size was seen at eight-month follow-up, but that this came about as a result of a decrease in depressive symptoms among the intervention group, which the authors regard as a treatment effect.

It is important to note that Horowitz and Garber (2006) did not claim that universal approaches are ineffective. Instead, in the context of their analysis, they found that

indicated and selective approaches were more effective. However, they also made a point of noting that the nature of the various approaches means that the participant profile will differ between the three, and that these differences must be borne in mind when comparing the effectiveness of the various strategies. They note that in universal samples it is not unusual for control participants to show levels of depressive symptoms so low at follow-up that it becomes difficult to demonstrate a preventive effect for the intervention. By way of contrast, in selective and indicated studies, the participant sample is selected on the basis of risk. This means there is a greater likelihood of higher depressive symptoms at baseline, and therefore also that these symptoms may increase over time relative to intervention participants.

As stated previously, this research is being conducted from a positive psychology perspective. With the emphasis on enhancing well-being as opposed to treating/repairing deficits among adolescents, it was logical that, after the initial survey, a universal approach would be taken in recruitment of participants for the intervention phase.

One such school-based universal intervention designed to prevent adolescent depression is the Resourceful Adolescent Program (RAP). Shochet and Ham (2004) outlined that the RAP for adolescents (RAP-A) and parents (RAP-P) were developed in Australia in the 1990s to fill a perceived need for a universal intervention that could be delivered as part of the curriculum within school settings to entire groups, irrespective of risk status, thus removing any potential stigma. The RAP-A is designed to be delivered in 11 sessions of 45 to 50 minutes, thus allowing it to be timetabled for a single class period each week. The authors note that the programme

is usually offered among relatively small groups of up to 15 participants in first year of high school (approximately age 11). It is explicitly stated that the programme focuses on building resilience and enhancing strengths, as opposed to identifying deficits, and seeks to do so by integrating elements of CBT (e.g., stress management, cognitive restructuring, and problem-solving) with aspects of interpersonal therapy (e.g., building personal support networks, preventing and managing conflicts, and considering the perspectives of others). The overall goal of the programme is stated as being “to develop strategies to maintain or recover positive self-esteem in the face of stress” (p. 18).

Shochet and Ham (2004) detail how the RAP-A underwent its initial efficacy trial in Australia in 2001 and was then adapted for New Zealand in 2004. In the years since then, the programme has been used in other countries. Rivet-Duval, Heriot, and Hunt (2011) reported on a study evaluating the RAP-A among adolescents in Mauritius. Participants included 160 children and adolescents recruited from two single-sex schools, leading to a 50/50 split between males and females drawn from Year 7 and Year 9 (age range: 12-16 years; mean age for intervention group = 13.7; mean age for control group = 14.2). Participants completed measures on depressive symptoms (RADScale-2 [all participants], Hopelessness Scale for Children [Year 7], and Beck Hopelessness Scale [Year 9]), coping skills (Youth Coping Index), and self-esteem (RSES) at baseline, post-intervention, and follow-up (six months later). Analyses of covariance were conducted to compare scores between active and control group participants, with effect sizes calculated using Cohen’s *d*. They reported a significant main effect at post-intervention ($F(1,157) = 12.65, p < .001$), but not at follow-up ($F(1, 157) = 0.63, ns$). Consistent with this pattern, the authors added that the

intervention group showed lower RADS-2 scores than control participants at post-intervention ($ES = -0.32$), but scores between the groups were similar by follow-up ($ES = -0.02$). Against the backdrop of these findings, the authors concluded that the RAP-A may be best regarded as a promoter of positive mental health as opposed to having direct prevention or intervention effects on clinical problems.

Stallard et al. (2013) conducted a cluster randomised trial with a view towards investigating the clinical effectiveness and cost-effectiveness of a modified version of the RAP (RAP-UK) in secondary schools in the United Kingdom ($n = 5,030$, age range: 12-16 years). After randomisation, active condition participants took part in the RAP sessions, while control groups were assigned to normally scheduled Personal, Social and Health Education (PSHE) classes and attention control (PSHE classes with support provided by two facilitators). Clinical effectiveness was assessed based on comparisons of scores on the Short Moods and Feelings Questionnaire (a 13-item measure derived from the 33-item Mood and Feelings Questionnaire) 12 months on from baseline, with participants in each of the three conditions categorised as high risk or low risk for depression based on initial ratings. Repeated measures mixed-effects regression models were used to investigate relationships between the trial arms over time. The authors reported that SMFQ scores decreased for high-risk adolescents across all three conditions over 12 months, but that little difference was seen between them – RAP-UK versus usual PSHE: adjusted difference in means = .97, 95% CI (- .34, 2.28); RAP-UK versus attention control PSHE: adjusted difference in means = - .63, 95% CI (-1.99, .73). They concluded that classroom-based CBT may result in increased self-awareness and reporting of depressive symptoms, but that outcomes were similar for at-risk participants in each of the three conditions.

Against the stated backdrop of awareness that depressive disorders are widespread among adolescents, Possel, Baldus, Horn, Groen, and Hautzinger (2005) designed and tested a cognitive-behavioural, school-based universal primary prevention programme. This Germany-based research involved 347 participants spread across six schools, with the overall group assigned class-wise into an active group (113 males, 87 females, mean age = 13.82 years, SD = .71) and a control group (68 males, 79 females, mean age = 14.18 years, SD = .78). The CES-D was used to measure depressive symptoms, the 30-item Automatic Thought Questionnaire was used to assess dysfunctional thoughts, the six-item Questionnaire of Social Support measured perceived social support, the 10-item General Self-Efficacy Scale assessed self-efficacy, the Bremen Youth's Event List assessed positive and negative life events, the 27-item Daily Hassles and Daily Uplifts Questionnaire assessed positive and negative events in everyday life, and the Evaluation Questionnaire measured active condition participants acceptance of the intervention programme, and was completed at the end of each session. The methods used in the programme devised by Possel et al. were taken from CBT, and were broken down into four distinct parts – highlighting the relationship between cognition, emotion, and behaviour, exploring and changing dysfunctional cognitions, assertiveness training, and social competence training. The programme, titled Training the Ease of Handling Social Aspects in Everyday Life (LISA) ran once a week for a period of 10 weeks during regularly scheduled school classes, with each session taking up two periods (90 minutes). While active participants were receiving the LISA programme, control participants attended their usual classes. LISA classes were divided on sex grounds and group sizes ranged from eight to 24. All participants were evaluated on three occasions – pre-assessment (T1), post-assessment (T2), and three-month follow-up (T3). With a view towards avoiding

potential methodological problems arising from interactions between students of the same class or school, the authors analysed data using a mixed-model repeated measures ANOVA, with class nested within one condition and students nested within class and condition. DVs were depressive symptoms, automatic thoughts, and social support, while time, condition, and initial general self-efficacy were treated as IVs (with the role of self-efficacy being a particular focus in this work). They hypothesised that the prevention programme would reduce risk factors for depression and therefore prevent the increase of depressive symptoms. The authors used a 3x2x2 factorial design with time as a repeated measurement. Examining depressive symptoms, they reported significant findings for the main effect of condition, $F(1, 156) = 6.04, p < .05$. They concluded that the programme proved to be effective, noting that participants who received LISA remained on a low level of depression and had larger social networks, whereas the control group showed increased levels of depressive symptoms and a reduced use of social networks. It is important to note that in this work, the authors did not report a time x condition effect, but instead their findings related to time x condition x low self-efficacy. While self-efficacy features in the current research, it is not the central focus (i.e., it is an IV, not a DV in the initial survey). That said, the key point is that Possel et al. reported encouraging findings arising from a cognitive-behavioural programme undertaken among adolescents.

As previously stated, this research is being informed by a positive psychology perspective. That being the case, it was decided that the cognitive intervention should be geared first and foremost towards cultivating strengths rather than seeking to alleviate negative symptoms. Cognitive Behavioural Coaching (CBC) is adapted from CBT (Palmer & Gyllenstein, 2008). CBT, as outlined previously, is overtly treatment-

based, whereas in CBC the main emphasis is on improving performance. Arising from this, Neenan and Palmer (2001) state that the primary difference between the two approaches is that CBC is used with non-clinical groups, i.e., while the techniques are similar, CBC and CBT tend to target different populations. As such, CBC is compatible with a positive psychology perspective, and therefore suitable for use in this research.

Kauffman (2006) establishes a direct link between coaching and positive psychology, insisting not merely that both share the same objectives in terms of human performance, but that positive psychology provides the scientific foundation upon which the practical methods and strategies of coaching are built. The author highlights positive emotion, flow, hope therapy, and classification of strengths as preoccupations of positive psychology that can be “mined for potential coaching interventions” (p. 219). She highlights how the essence of both positive psychology and coaching reside in the explicit attempt to move attention away from pathology and pain and towards a deliberate concentration on strength, vision, and dreams, both in terms of objectives and the language used in pursuit of those goals. The author highlights the complementarity that exists between positive psychology and coaching when noting that coaches can face a challenge in describing how and why the process works, but that the evidence base provided in positive psychology-related research can provide the necessary information to make that case.

CBC is a relatively new approach, and so evidence of its efficacy is relatively limited compared to that for CBT, but a body of literature is developing which suggests that it

may be useful in preventing mental health problems and enhancing individual performance, among both adults and adolescents in non-clinical settings.

As pointed out by Devine, Meyers, and Houssemand (2013), the bulk of the research into the potential applications of coaching in an education setting up to this point has taken place in the United Kingdom, United States, and Australia. The evidence emerging from these studies, they maintain, suggests that coaching-based approaches can be a useful tool to support learning and development not only for students, but also teachers, school leaders, and educational establishments as whole.

Madden, Green, and Grant (2011) conducted a pilot study to evaluate a strengths-based coaching programme for primary school students in Australia, in which the primary objective was to enhance levels of engagement and hope. Thirty-eight male pupils (mean age = 10.7 years) took part in the research. Participants completed self-report measures prior to the intervention programme getting under way and at its conclusion to assess levels of engagement and hope. After the first round of questionnaires, participants were randomly assigned to groups of four or five, with each of these groups completing eight coaching sessions with a qualified teacher who had also completed coach-specific training. There was no control group in this study, i.e., all participants received the coaching programme. The intervention sessions were held every fortnight across six months, with each individual session lasting for 45 minutes. The programme was made up of three key parts – raising participants' self-awareness, including the identification of character strengths; coaching participants to identify personal resources and use those in working towards goals; and working through the self-regulation cycle, i.e., setting goals, developing plans of action, and

evaluating progress. The results of paired t-tests analyses supported the hypothesis that participation in the coaching programme would be associated with increased engagement ($t[37] = 3.30, p < .001$) and hope ($t[37] = 3.39, p < .01$). The authors also reported a large effect size for hope ($d = 2.70$) and a medium effect size for engagement ($d = .98$). They deemed these results to be promising, but also counselled caution, acknowledging that this piece of research was a small-scale pilot study. However, despite that caveat, they suggested that their findings supported the case for coaching interventions to be used as mental health promotion programmes in school settings. It should be noted that the absence of a control group was a weakness in this research. The findings as presented may have been more powerful had there also been participants assessed for comparison purposes.

Grant (2003) conducted an exploratory study into the impact of coaching on goal attainment, metacognition, and mental health. In a within-subjects design, 20 postgraduate students in an Australian university (5 males, 15 females, mean age: 36.5 years) took part in a solution-focused coaching programme. Participants initially completed a life inventory task in which they examined key areas, such as work, health, and relationships. Arising from this, they developed tangible and measureable objectives to work towards during a 13-week period. Participants met in groups of 10 for 50-minute weekly group sessions in which they were coached in the application of CBC techniques, e.g., self-monitoring, cognitive restructuring, behavioural modification environmental structuring, and solution-focused techniques. Participants also completed a number of questionnaires before and following the completion of the programme, including the Goal Attainment Scale, the Depression Anxiety and Stress Scale, and the Self-Reflection and Insight Scale. Analysing the data using t-tests,

Grant reported that the coaching programme was associated with increased goal attainment (with an effect size of $d = 2.85$), significant reductions in depression, anxiety, and stress ($d = .82$, $d = .48$, and $d = .69$ respectively), and also enhanced quality of life ($d = 1.62$), while levels of insight increased significantly ($d = .59$) and self-reflection decreased significantly ($d = .76$). Grant concluded that coaching had promise as a technique for personal development and goal attainment, and also made a point of stating that it may prove to be a useful platform for positive psychology and investigation of the psychological mechanisms relevant to purposeful change in non-clinical populations. However, he also acknowledged that the lack of a control group in his study was a limitation.

Green, Grant, and Rynsaardt (2007) examined the efficacy of an evidence-based, cognitive-behavioural, solution-focused coaching programme among high school students in Australia. In a randomised controlled experimental design, 56 adolescent female school students (mean age: 16.09 years, age range: 16-17 years) were assigned to either a coaching group or wait-list control group (28 participants in each). Coaching group participants were each assigned a teacher-coach, with the teachers having been trained in the theories of coaching psychology over two half-day workshops. The coaching programme consisted of 10 individual one-on-one sessions and was conducted over two school terms (28 weeks). Participants were encouraged to examine aspects of their lives and focus on two issues they wished to be coached on, one personal and one school-related. The aims of the coaching sessions were to raise participants' personal awareness of their current situation, identify personal resources that could be used to help realise their objectives, and to develop self-generated solutions and specific action steps towards those goals. Participants in both

groups also completed a number of measures, before and at the end of the coaching programme, including the Trait Hope Scale, the Cognitive Hardiness Scale, and the Depression Anxiety Stress Scale. ANOVAs were conducted individually on both hope and cognitive hardiness scores to assess the effectiveness of the coaching programme. The authors reported significant treatment by time interaction effects in both instances, with follow-up analyses indicating that hope and cognitive hardiness scores increased to a statistically significant level among coaching programme participants, but with no such change detected among the control group. Changes in depression, anxiety, and stress over time were assessed using the Wilcoxon Signed-Rank Test. The authors reported significant decreases over time among coaching programme participants, with this pattern not replicated among control participants. The authors concluded that coaching may be an effective intervention for adolescents in the school setting.

Passmore and Brown (2009) reported on a multi-school longitudinal coaching study in England. The Sandwell Coaching Project was established with a view towards impacting positively on educational under-attainment in Sandwell, an area in the West Midlands. Eighteen schools were recruited to take part in the project. Newly qualified graduates with an interest in teaching (but without formal teaching qualifications) were trained as coaches, with an emphasis on a behaviour goal focused model of coaching, i.e., focusing on coaching skills in the context of problem solving, learning, and group behaviour. Participants were specifically targeted among those students identified as not performing to their potential. Over three years, 1,987 students received coaching (mean age: 15 years), with sessions lasting approximately 60 minutes and occurring every four to eight weeks, while the main focus in each session

was on study skills, work topics, problems, and personal goals. Annual results were compared year-on-year for the duration of the project (2004 to 2007), with the overall trend in terms of examination performance shown to be upward, not only within the participating schools, but when compared to neighbouring schools that were not involved. The authors concluded that the results showed coaching can be an effective intervention for improving examination performance, and that this implies it also serves to build hope and resilience in adolescents.

In Ireland, O'Donovan (2009, 2010) has developed CRAIC (Control, Responsibility, Awareness, Impetus, and Confidence), a framework within which a CBC approach has been originated and continues to develop. O'Donovan explains that by positioning CRAIC within a cognitive behavioural framework, he sets out a coaching model influenced by the contention that we do not see the world as it is, but instead as we are, based on our own constructed reality as opposed to an objective reality. He sets out: "How we come to view our world and how we potentially impact it, is a complex interaction of our make-up (physiological), the context/environment we find ourselves in, the style of thinking we engage in (cognitive distortions) and the manner in which, in emotional terms we respond or react to the perceived environment in producing the behaviour (sometimes maladaptive) that we do" (O'Donovan, 2009, p. 15).

The CRAIC model seeks to combine the findings of evidence-based psychology (cognitive behavioural) with the emerging body of evidence flowing from positive psychology. One of the stated objectives is to develop a coaching conversation within which the potential resides to facilitate sustainable development and growth, and emotionally intelligent changes in thinking and behaviour. O'Donovan explicitly

locates CRAIC within the positive psychology sphere when he states that the framework is fundamentally concerned with building confidence and resilience, and is not concerned with “hubris or defeatism” (O’Donovan, 2010, p. 16). For the purposes of the current research, this intervention strategy will inform one of three in-school programmes conducted following the initial survey. Originated in Ireland and therefore suitable for an Irish population, the CRAIC model is also appropriate in this instance as it combines an overtly cognitive approach with a coaching perspective, locating it within the positive psychology sphere. The originator of the programme was recruited to lead the intervention in the relevant school and adapted it to suit the requirements of a) a short-running programme and b) an adolescent population.

5.7 Summary

Five cognitive constructs were included in the initial survey to assess their potential predictive value as it relates to self-reported scores on well-being (operationalised as subjective happiness, depressive symptoms, and life satisfaction), with a view towards the survey results guiding the follow-up intervention phase in this research.

Attributional style relates to how individuals tend to explain the causes of negative events in their lives. A reformulation of the learned helplessness model of depression, which was developed working with animals, the attributional framework sought to recognise that when humans feel helpless in a given situation, they will tend to ask why. The causal attribution attached to the situation will then influence how an individual responds to it. The theory proposes that if individuals attach a stable/long-lasting cause to a particular event (as opposed to transient or unstable causes), then helplessness can be chronic; if the cause is regarded as pervasive/global (as opposed

to more specific to the situation at hand), then helplessness can be widespread; and if an internal cause is attributed to the negative event (as opposed to an external source, independent of the individual), then this can have a detrimental impact upon self-esteem. This model ascribed human depression in the face of perceived helplessness to internal, stable, and global factors, while stressing that the attributional/explanatory styles themselves were not the cause of depressive symptoms, but were better regarded as risk factors.

The early 1990s saw a shift in emphasis, when Seligman began to look at explanatory styles that are connected with overcoming adversity, as opposed to contributing to vulnerability to depressive symptoms. A key element in this approach was the contention that just as helplessness could be learned in response to negative stimuli in the environment, so too could the habits of optimism be cultivated. This involved encouraging individuals, through a process called ‘disputing’, to recognise the cognitive distortions that operate in their thinking – negative, self-defeating, faulty thinking styles that people tend not to question, instead accepting as ‘true’.

As conceived by Scheier and Carver (1985), dispositional optimism is trait-like, and therefore possessed by all people to varying degrees. This view has it that some people will view the world around them in more favourable terms than others, with some generally believing that good things will happen to them, while those with a more pessimistic outlook tend to believe that negative events will occur more often. Carver, Scheier, and Segerstrom (2010) locate the trait-based view of optimism within the tradition of expectancy-value theories of motivation. This proposes that behaviour reflects the conscious pursuit of goals, objectives, or desired states, with how

confident and doubtful people are about achieving these things a function of their general level of optimism and pessimism.

Bandura (1977) contextualises self-efficacy within social learning theory, regarding it as relating to individual beliefs about the ability to succeed in given domains, with those beliefs then influencing effort applied and persistence in those efforts when obstacles are inevitably encountered. Bandura (1994) states that individuals with high perceived self-efficacy will approach obstacles and difficulties as challenges to be overcome, whereas people with low perceived self-efficacy will doubt their ability to achieve in certain domains and so can opt not to pursue courses of action in which they expect to meet obstacles.

Resilience refers to the process of overcoming the negative effects of being exposed to specific forms of risk, coping with traumatic experiences, and avoiding negative trajectories and outcomes associated with different risk factors. The primary focus of resilience theory is to understand healthy development in the context of exposure to risk. Masten (2001) highlights how initially it was thought that resilience in the face of risk was somehow exceptional, but that it subsequently became apparent that the most notable aspect of resilience is how widespread it is, not its rarity. From this perspective, it appears that the capacity for resilience resides in basic human adaptational systems.

While the presence of risk is regarded as a pre-requisite for the manifestation and expression of resilience, there are different views on what constitutes an 'at-risk' group. Masten (2001) and others point to specifically identified groups and

individuals; however, Eakey and Walters (2003) make the case that adolescence itself constitutes an at-risk group regardless of circumstances.

For Rosenberg and Pearlin (1978), self-esteem describes a psychological outcome reflecting a global positive or negative attitude towards the self. This outcome arises from various internal cognitive processes, including social comparisons, reflected appraisals, self-perception, and psychological centrality. Greenwald and Banaji (1995) highlight the distinction between explicit and implicit self-esteem, regarding the former as relating to conscious awareness, and the latter to an intuitive-level experiential sense of the self.

Arising from the recognition that how adolescents perceive of themselves in relation to various cognitive constructs can have wide-ranging implications for mental health and well-being, programmes designed to impact positively on self-cognition are becoming increasingly common in school settings. Cognitive-behavioural interventions such as the PRP and RAP-A have been conducted in many countries, with results indicating that such approaches can be beneficial for young people in terms of enhancing well-being. Coaching-based interventions, rooted in a positive psychology perspective and therefore eschewing a pathological paradigm, are also now appearing in school settings. Because coaching is explicitly concerned with developing strengths, as opposed to repairing deficits, it lends itself to universal-type interventions. The literature in this area is still developing, but encouraging results have been reported.

6. GRATITUDE

Gratitude is an emotion which appears to be felt frequently and strongly by most people (McCullough, Emmons, and Tsang, 2002). While long being a focus of attention in philosophy and theology, gratitude was relatively neglected as a topic of research by psychology until recent years (McCullough, Kilpatrick, Emmons, & Larson, 2001). This neglect has been linked with the trend in psychology to devote the overwhelming majority of its attention to investigating mental illness, with this emphasis having had negative consequences with regard to research efforts into more positive areas of life (Linley, Joseph, Harrington, & Wood, 2006). The emergence of the positive psychology movement post-2000 has been identified as a turning point for the popularisation of gratitude as a research topic in the science of mind and behaviour (Wood, Froh, & Geraghty, 2010).

6.1 Perspectives on gratitude

Gratitude can be considered in a number of ways. Wood, Joseph, and Linley (2007) highlight that it can be conceptualised as an affect, a behaviour, or a personality trait, Wood, Maltby, Stewart, Linley, and Joseph (2008) emphasise state and trait levels, while Emmons (2012) notes that it can have both worldly and transcendent aspects.

With regard to affect, Wood et al. (2007) highlight the line of research which suggests that state gratitude acts as a moral barometer (drawing attention to assistance received), a moral motivator (encouraging a prosocial response to help), and a moral reinforcer (expressions of gratitude make the recipient more likely to offer help in the future) (e.g., McCullough et al., 2001). On gratitude as a behaviour, the authors point to research indicating that its manifestations can vary across cultures (e.g., Naito,

Wangwan, & Tani, 2005) and that the level of imposition involved is also a factor (e.g., Okamoto & Robinson, 1997). On gratitude as a personality trait, they point to research which finds that some people feel more gratitude than others, feel it more intensely when they feel it, and feel this sense of appreciation across a greater range of people and events (e.g., McCullough et al., 2002).

Wood et al. (2008) characterise gratitude as having trait and state levels. For these authors, the distinction between the two is that trait gratitude refers to individual differences in the frequency with which related affects and moods are experienced in the course of daily life, whereas state gratitude refers to the emotion felt after receiving aid and which motivates the reciprocation of aid. They add that state gratitude-related emotions can involve either temporary affects or longer-lasting moods, and that these may also have associated thought and action tendencies. McCullough, Tsang, and Emmons (2004) highlight the connection between both state and trait forms of gratitude when reporting that higher levels of trait gratitude are related to the experiencing of more intense and frequent state gratitude in daily life.

Wood et al. (2010) state that there is not unanimity on the nature of trait gratitude. They note that gratitude is in part an emotion that occurs within individuals after receiving aid they perceive to be costly, valuable, and altruistic, and that from this starting point many researchers have conceptualised it as being characterised by the appreciation of helpful actions undertaken by others. They maintain that while this conception is accurate up to a point, it does not fully capture those aspects of people's lives which they self-report as feeling grateful for. They refer to Emmons and McCullough's (2003) research which asked participants to maintain daily gratitude

logs (a Counting Your Blessings exercise, more detail on which will be presented later in this chapter), noting that some of the gratitude-inducing events cited (e.g. ‘waking up in the morning’) did not involve an external benefactor and neither was the gratitude necessarily externalised towards another source. Against this backdrop, Wood et al. (2010) suggest trait level gratitude may be one element of a wider life orientation towards registering and feeling appreciation for positive points and events in the world. One of the key elements around conceptions of trait gratitude is subjectivity, with the disposition towards gratitude constituting a “life orientation toward noticing and appreciating the positive in life” (Wood et al., 2010, p. 891).

Emmons (2012) states that the concept of gratitude has a dual meaning, and can be understood both from worldly and transcendent perspectives. On the more grounded side, he describes gratitude as “a feeling that occurs in interpersonal exchanges when one person acknowledges receiving a valuable benefit from another” (p. 50). He goes on to point out that gratitude is a social emotion, one which functions to assist in the regulation of human relationships, contributing to their solidification and strengthening. He ascribes an “energizing and motivating quality” (p. 50) to it, adding that gratitude inculcates a positive state of mind which can lead to positive action towards others. This aspect, he maintains, and as mentioned previously in the context of earlier work, highlights that gratitude is not only a response to the perceived receiving of kindnesses, but also acts as a motivator for future acts of benevolence towards others from the original recipient.

Emmons (2012) presents the transcendent understanding of gratitude as being rooted in philosophy and religion. He notes that philosophies and theologies tend to view

gratitude as central to religious belief systems, and that “as long as people have believed in a Supreme Being, believers have sought ways to express gratitude and thanksgiving to this Being” (p.50). However, he also stresses that gratitude retains a spiritual nature even when located outside the context of theistic traditions. He says that the spiritual core at the heart of the experience of gratitude is vital if it is not to be used merely as “a tool for narcissistic self-improvement” (p.50).

McCullough et al. (2001) made a related point, highlighting the degree to which gratitude has earned near-universal approval on a society level throughout human history, with its presence glorified and absence lamented. They present quotes from Roman Empire-era philosophers Cicero and Seneca to underscore this point, with that ascribed to the former heralding gratitude as “not only the greatest of virtues, but the parent of all the others”, and the latter referring to ingratitude as “an abomination” (p. 249).

Wood (2014) notes that gratitude is a cognitive and emotional reaction that arises among individuals in the act of noticing and appreciating benefits they recognise having received. He adds that these ‘benefits’ are diverse by nature and include direct help, tangible possessions, positive relationships, the positive in a given moment, and doing well compared to others.

McCullough et al. (2001) characterised gratitude as being both a response to and motivator of moral behaviour. This conception suggests that gratitude benefits both the recipient of it and the individual who feels this positive emotion in response to actions directed towards them by another. Elaborating upon this, these authors state

that people will respond with an expression of gratitude when others around them behave in ways that promote their well-being – characterising the parties in this social situation respectively as beneficiaries and benefactors. According to this view, beneficiaries of the behaviour of benefactors will themselves go on to promote the well-being of others when they have been made to feel grateful. The third key point as McCullough et al. present it is that benefactors are likely to continue to behave in a prosocial manner in the future when gratitude has been expressed towards them.

Wood et al. (2007) also highlighted that gratitude as a concept has received considerable attention from religion and philosophy over many centuries. They noted that gratitude has been to the forefront of various religious traditions, such as Buddhism, Christianity, Judaism, and Islam. The authors stated that considerations of gratitude have also come from more secular sources, pointing to the writings of 18th century philosopher Adam Smith, who is best known for his output on economics, but also wrote on the importance of gratitude for a functioning society, emphasising its role in motivating reciprocation of aid when no other such incentivising force existed in emerging western society (e.g., A. Smith, 1759/2002). The authors noted, as mentioned at the start of this chapter, that the study of gratitude had been neglected by psychology until relatively recently. They tie this apparent neglect into assertions of a broader trend towards only minor emphases on the positive aspects of life, with the emergence of the positive psychology movement marking a conscious effort to redress this perceived imbalance (Linley et al., 2006).

6.2 Gratitude and well-being

Many researchers have attempted to investigate the nature of the relationship between gratitude and well-being. The overview reported by Wood et al. (2007) highlighted findings suggesting that individuals who feel more gratitude are more likely to have higher levels of happiness and lower levels of depressive symptoms (e.g., McCullough et al., 2004; Watkins, Woodward, Stone, & Kolts, 2003).

McCullough et al. (2004) conducted correlational research examining links between grateful moods and individual differences on a number of variables, and found that higher scores on positive affective traits and lower levels of depressive symptoms predicted levels of daily gratitude self-reported over a three-week period. In this United States-based research, 96 participants (67 females, 29 males; mean age: 49 years, age range: 22-77) with either congenital or adult-onset neuromuscular diseases initially completed a 28-page survey containing questionnaires on gratitude (Gratitude Questionnaire: 12-item form), life satisfaction (SWLS), general well-being (Campbell Well-Being Scale), optimism (LOT), depressive symptoms (CES-D), positive affectivity and negative affectivity (PANAS), personality (Big Five Inventory), and spiritual transcendence (Spiritual Transcendence Scale). One year on, the participants were enrolled in a mood diary study, in which each was asked to rate the intensity with which they felt a range of emotions on a daily basis for three weeks, with the researchers measuring gratitude by calculating mean scores on three gratitude-related emotion words – grateful, thankful, and appreciative. One month after the completion of the diary task, participants completed a follow-up set of questionnaires, including the Gratitude Questionnaire: 6-item form (GQ-6). Statistical analyses were conducted using a two-level modelling strategy, which allowed the researchers to simultaneously

fit both within-person longitudinal models and between-person models in seeking to account for individual differences in the parameters of the within-person models. They reported that both measures of gratitude as an affective trait were positively and significantly related to individual differences in mean daily mood gratitude scores – GQ-12: coefficient = .72, $r = .37$, $p < .001$; GQ-6: coefficient = .45, $r = .37$, $p < .001$ – with participants who regarded themselves as well disposed towards experiencing gratitude actually experiencing higher levels of gratitude in their daily moods. Similar patterns were also seen with life satisfaction, well-being, optimism, and positive affectivity, with high scores predicting gratitude in the daily mood ratings, while there was an inverse negative relationship between daily gratitude and self-reports on negative affect and depressive symptoms.

Watkins et al. (2003) reported on studies conducted to develop a dispositional gratitude measure (the Gratitude Resentment and Appreciation Test) and also to evaluate the relationship between gratitude and SWB. In one of the studies conducted as part of that research, the authors asked whether grateful individuals would be more likely to experience gratitude and positive affect in the context of a gratitude manipulation. One hundred and four undergraduate psychology students at a United States university were assigned to one of two conditions – gratitude condition participants were asked to list things they did the previous summer and felt grateful for, while the other participants were asked to list things they wanted to do during that summer but had been unable to do. This went on for five minutes, after which all completed the GRAT, the Semantic Differential Feeling and Mood States scale, the SWLS, the BDI, and the PANAS, the latter of which was the primary DV.

Participants also offered four semantic differential ratings for 10 neutral words, which

the authors stated gave them an indirect measure of SWB. The impact of the manipulation on positive and negative affect in turn was assessed using a 2 (gratitude condition) x 2 (sex) ANOVA. One of the main findings reported was that participants in the gratitude condition reported lower negative affect scores (mean = 15.74, SE = 1.01) than the control condition (mean = 18.27, SE = 0.96). They concluded that a simple gratitude priming task could improve mood, though they noted the possibility that the control condition may have produced more negative affect than the gratitude condition improved mood. They conducted another study as part of this research to attempt to remove this potential ambiguity. In this study, 157 undergraduate students completed the PANAS both before and after the experimental manipulation, with a view towards measuring changes over time. Participants were assigned to one of four conditions – control group members were asked to write about the layout of a room in the home, with the other three groups assigned to one of three gratitude conditions, in which participants were asked to either think about a living person for whom they were grateful, write an essay about someone they were grateful for, or write a letter to someone they felt gratitude towards. Following the manipulation, all participants completed a number of scales, e.g., the SDFMS, BDI, and GRAT. The impact of the intervention on positive and negative affect was analysed using mixed-factorial General Linear Modelling, with time used as the within subjects variable, while condition was the between subjects variable. Dealing with positive affect, the authors reported a main effect for time – $F(1, 152) = 19.70, p < .05, ES = .115$ (moderate effect size). They noted that an examination of the means suggested that the effect was due to T2 positive affect scores being higher than those reported at T1. They also found that the main effect was modified by a significant time by condition interaction – $F(3, 152) = 6.84, p < .05, ES = .119$ (moderate effect size). They found support for the

prediction that the gratitude conditions would show reliable increases for positive affect and that this would not be the case with the control condition. Similar patterns were seen for negative affect, with this reducing over time from pre- to post-manipulation, but in this instance the time by condition interaction was found not to have reached significance.

Findings such as these have led researchers to ask why gratitude should appear to be so connected with emotions and feelings such as happiness and depression. It has been suggested that gratitude may have a strong link with mental health, a stronger link than most personality-related variables. N. Park, Peterson, and Seligman (2004) examined the relationship between 24 representative character strengths and life satisfaction. Investigating these relationships by analysing data sourced online from 5,299 adult participants in three samples using the Values in Action Inventory of Strengths (VIA-IS), they consistently found gratitude to be associated with life satisfaction. They reported that gratitude related to life satisfaction at $r = .43$, ranking it third among the 24 strengths examined, and also accounted for 18.5% of individual differences in reported happiness.

The link between gratitude and well-being was highlighted in a recent review conducted by Wood et al. (2010). The authors billed theirs as the first review of the literature on this connection, and stated unambiguously that it remains strong no matter how well-being is defined, e.g., through psychopathology and general emotional functioning. They base this assertion on examining 20 published papers that looked at gratitude in relation to a range of other well-being-related variables. Under the psychopathology heading, the authors pointed to studies on depression

demonstrating that a life orientation leaning towards positive interpretations is not compatible with counter-productive negative beliefs relating to the self, the world, and the future (e.g., J. Evans, Heron, Lewis, Araya, & Wolke, 2005).

Wood et al. (2010) stated that the strong link between gratitude and well-being suggests that the connection may be unique and causal, but noted that most of the work into gratitude and personality has been cross-sectional in nature, and therefore the direction of causality between the two is not clear. Also, they made a point of stating that reports of increased well-being at T2 in gratitude-based interventions may not necessarily be due to increased levels of gratitude, noting that “it is not logical to say (a) gratitude interventions increase well-being, and (b) gratitude interventions increase gratitude, therefore (c) gratitude interventions increase well-being because they increase gratitude (this would be an illogical syllogism)” (p. 900), adding that most of the studies looked at in their review did not assess whether gratitude levels had changed at the post-intervention data gathering moment, e.g., one of the studies undertaken by Watkins et al. (2003) described earlier did not take a baseline gratitude measure. Against this backdrop, the authors stressed that further research is necessary to look into the mechanisms whereby gratitude as a personality trait relates to well-being, though they single out four possible explanations, the first two of which are gratitude specific hypotheses, while the latter two are more general – schematic processing, coping, positive affect, and broaden-and-build processes.

With regard to schematic processing, Wood et al. (2010) stated that gratitude – considered as an interpersonal emotion – occurs when an individual is the recipient of help they perceive to have been costly to provide, valuable, and offered in a spirit of

altruism. They pointed to research showing that more grateful people tend to have specific schematic biases towards viewing help as more beneficial, and also that levels of gratitude can vary based upon perceptions of cost, value, and altruism as it relates to the benefactors (e.g., Wood et al., 2008). In other words, people are more likely to feel grateful when they perceive the action of the benefactor to involve a greater cost, more value, and unambiguous altruism. Wood et al. (2010) state that results such as these suggest that grateful people live life with an interpretive lens geared towards perceiving help from others in this way.

Wood et al. (2010) highlighted one research paper that examined the relationship between coping and gratitude (Wood et al, 2007), noting that the latter was linked to three categories of coping – grateful people were more likely to seek out and use instrumental and emotional social support, they were more likely to use approach-coping strategies when facing problems in their life, and they were less likely to exhibit avoidant-coping strategies, such as pretending the problem doesn't exist and seeking an escape through reckless use of potentially harmful substances. However, it was also noted that in this same piece of research, while the three strategies accounted for 51% of the relationship between gratitude and stress, coping did not mediate the relationship between gratitude and happiness, depression, or life satisfaction – the three dependent variables featured in the preliminary survey conducted as part of the current research and the outcome variables through which well-being is operationalised for the intervention phase. With regard to the findings here, Wood et al. (2010) suggest that coping may offer a partial explanation for why grateful people self-report less stress, but that other mechanisms may be in play when considering the relationship between gratitude and other elements of well-being.

With regard to the more general hypotheses on the relationship between gratitude and well-being, Wood et al. (2010) first deal with positive affect. They highlight research to the effect that the frequent experience of positive emotions has been found to offer protection against many mental disorders (e.g., Watson & Naragon-Gainey, 2010), and also note how gratitude may fit into this picture as it is a positively valenced emotion. This point of view has it that the protective spin-offs associated with positive emotions may be a benefit of being grateful. However, they add that even if this is so, the relationship between gratitude and well-being is not likely to be fully explained by positive affect: “The Big Five trait of agreeableness consumes trait differences in positive affect, and several studies have shown that gratitude relates to a host of social and well-being variables after controlling for agreeableness” (p.901-902). In a study Wood et al. billed as conclusive, McCullough et al. (2002) demonstrated using a meta-analytic approach that controlling for agreeableness did not alter the relationship between gratitude and any other variable being studied.

The last of the four hypotheses highlighted by Wood et al. (2010) in this context is the broaden-and-build theory of positive emotions. Discussed in more depth in Chapter 4, this theory highlights the potential benefits of experiencing positive emotions, proposing that they facilitate broadened awareness and patterns of thinking, which in turn build durable mental resources in individuals. Gratitude would be regarded as one such emotion.

Emmons (2012) stated that gratitude forms a key part of the foundation to well-being and mental health in general throughout the lifespan. He stressed that there is

accumulating evidence to demonstrate that from childhood to old age gratitude is associated with a range of psychological, physical, and relational benefits.

Emmons and McCullough (2003) conducted a study in the United States looking at the effect of a grateful outlook on psychological and physical well-being. Their primary stated purpose was to assess whether relative to focusing on complaints or neutral events, focusing on counting one's blessings boosts psychological and physical functioning.

The study involved 201 undergraduate students (147 female, 54 male). Participants were randomly assigned to the three experimental conditions – blessings, hassles, or life events. Participants in the blessings conditions were asked to write a weekly report for 10 weeks about up to five things they felt grateful for in the preceding seven days, participants in the hassles condition were also asked to complete 10 weekly reports, but were requested to list up to five hassles felt on the specific day in question, while life events condition participants were asked to reflect back on the previous seven days for the duration of the study. As well as this, participants across all three conditions were asked to complete ratings of mood, physical symptoms, reactions to social support received, approximated time spent exercising, and two global life appraisal questions. For mood ratings, participants were asked to report the extent to which they experienced each of 30 affect items over the previous seven days (e.g., grateful, thankful, appreciative) on a scale from 1 to 5. For global life appraisals, participants were asked to answer two questions assessing concurrent and prospective overall well-being each week. First, they were asked to rate how they felt about their life as a whole during the week, from -3 (terrible) to +3 (delighted), and then to rate

their expectations for the week to come (again on a 7-point scale, ranging from pessimistic/expect the worst to optimistic/expect the best). For the nine weeks during which follow-up surveys were collected, the researchers aggregated scores on three gratitude-related adjectives (grateful, thankful, and appreciative) to calculate a single measure of mean weekly gratitude, and the three-item composites were aggregated to create a single nine-week composite measure of gratitude. In addition, they calculated mean nine-week composites of positive and negative affect by submitting the composite scores of the 27 discrete affects to a maximum-likelihood factor analysis. They ultimately extracted just two factors from this analysis, with both accounting for a combined total of 59% of the variance in the 27 nine-week composite affects (the two factors were positive affect (33%) and negative affect (26%)).

They conducted a one-way analysis of variance (ANOVA) to assess whether the three experimental conditions were associated with different amounts of gratitude throughout the experimental period. For this analysis, the nine-week mean gratitude rating was the DV, while the three experimental conditions (blessings, hassles, and life events) were three levels of IV. They found a significant main effect for condition ($F(2,189) = 4.69, p = .01$). In addition, the gratitude condition was found to have produced more gratitude ($M = 10.16, SD = 1.93$) than the hassles condition ($M = 9.08, SD = 1.95$), while neither the gratitude or hassles condition elicited significantly different amounts of gratitude than the life events condition ($M = 9.58, SD = 2.15$). They reported an effect size of .56 for the mean difference between the gratitude and hassles conditions, an equivalent figure of .28 for the mean difference between gratitude and neutral events, and .24 for the mean difference between neutral events and hassle conditions, indicating that relative to the life events condition, the gratitude

and hassles conditions had nearly equal and opposite effects. On global life appraisals, the authors reported a significant main effect for the rating of one's life as a whole and expectations for the coming week, with gratitude group participants tending to rate their life more favourably on both items than those in the other two conditions. Gratitude condition participants averaged 5.05 (out of 7) when rating life as a whole and 5.48 when rating the upcoming week, while hassles participants reported 4.67 and 5.11 respectively and life events participants scored 4.66 and 5.10. It was also noted that gratitude condition participants reported fewer physical complaints and tended to spend more time exercising. Arising from these findings, the authors concluded that they had detected positive benefits which appeared to be specific to the gratitude condition. They positioned their findings against the backdrop of the broaden-and-build theory of positive emotions, as detailed by Fredrickson (1998). As mentioned previously, the broaden-and-build model contends that the experience of positive emotions can broaden mindsets and build enduring personal resources, with this process said to facilitate the experience of more positive emotions. Emmons and McCullough (2003) state that when viewed in the context of this model, gratitude is effective in increasing well-being, as it builds psychological, social, and spiritual resources. As is also key to the broaden-and-build model, feeling positive emotions in the present is seen as predictive of feeling more positive emotions in the future.

Froh, Sefick, and Emmons (2008) followed a quasi-experimental approach to examine the effects of a grateful outlook on SWB among early adolescents in the United States. This research was conducted with a view towards replicating Emmons and McCullough's (2003) work with a younger target demographic and so also used the counting blessings approach, randomly assigning 221 school-based participants (mean

age = 12.17, SD = .67) to one of three experimental conditions – gratitude (n = 76), hassles (n = 80), and control (n = 65). The participant population was made up of 49.8% males and 40.7% females, while 9.5% failed to indicate sex. Participants were drawn from 11 classes, with four each assigned to the gratitude and hassles conditions, while three served as no-treatment controls. Students enrolled in a mandatory ‘Family and Consumer Science’ course were sought for participation. This, the authors stressed, increased the probability of securing a representative sample from the full school population. Gratitude condition participants were asked to list up to five things they were grateful for during the preceding 24 hours. Hassle condition participants received identical instructions, but were asked to list up to five hassles. Daily ratings in line with these instructions were collected for a period of two weeks during school hours with a three-week follow-up. Twenty-five affect items were also put to participants, with those taking part asked to rate each on a Likert scale from 1 (not at all) to 5 (extremely) on a daily basis, with the instruction being to answer how strongly they had felt each affect item since the previous day. Participants were also asked to provide ratings on life satisfaction, physical symptoms, reactions to aid, and pro-social behaviour.

A factor analysis was conducted on data gathered during the study. As with Emmons and McCullough’s (2003) counting blessings research, it was specified that only two factors be extracted. These two factors accounted for 63.9% of the variance – positive affect (36%) and negative affect (27.9%). Froh et al. (2008) conducted an ANCOVA with a view towards determining to what extent, if at all, the three conditions differed with respect to gratitude over the duration of the data gathering period, with pre-test scores used as the covariate in these analyses. Follow-up tests showed that

participants in the gratitude condition reported greater gratitude relative to the hassles group using the post-test, $F(1, 213) = 6.63, p = .01$, and follow-up data, $F(1, 213) = 7.97, p < .01$. It was also found at post-test that gratitude and control condition participants reported significantly less negative affect relative to those assigned to the hassles group, $F(1, 216) = 5.05, p < .05$, $F(1, 216) = 6.85, p < .01$, respectively. These effects were maintained at the three-week follow-up.

Discussing their findings, Froh et al. (2008) stated that gratitude, as manipulated via a counting blessings intervention, had previously been shown to be related to SWB, but that until this specific piece of research had been conducted, the relationship had only been examined in adult populations. This marked the first occasion on which researchers had sought to manipulate gratitude and examine its relationship to well-being among an early adolescent population.

Froh, Kashdan, Ozimkowski, and Miller (2009) examined whether positive affect moderated the effects of a gratitude intervention conducted among children and adolescents. Their rationale for doing so was two-fold – they noted that almost half of work supporting the efficacy of gratitude interventions up to that time did so by making contrasts with techniques intended to induce negative affect, and also that published findings had suggested gratitude interventions offered limited benefits over control conditions. Against this backdrop, these authors asked whether positive affect might play a moderating role, i.e., people already high in positive affect may be less susceptible to experiencing gains in well-being, while individuals with lower levels of positive affect may require exposure to more positive events to come close to their peers.

This research was conducted in a parochial school in the United States, and involved 89 participants (mean age = 12.74, SD = 3.48, range = 8-19 years). The sex breakdown was almost equal, with slightly more females (50.6%). The three-item Gratitude Adjective Checklist (GAC) was used to assess gratitude, while participants also completed the 30-item PANAS for Children. Students were matched by grade and randomly assigned to either the gratitude intervention (n = 44) or control group (n = 45). Froh et al. (2009) noted that one of the reasons why they did not include a third condition was because they were working with a limited pool of participants and did not want to further limit their power. Gratitude condition participants were asked to write a gratitude letter to someone who had been particularly kind to them, but whom they had never properly thanked, and deliver it in person. By contrast, control group participants were simply asked to write about things they did on the previous day, and how they felt doing those things. The intervention lasted two weeks and was conducted during regular school hours. Students were given 10-15 minutes across five set days during the relevant fortnight to either work on the letter (gratitude condition) or journal on daily events (control condition). Baseline data (T1) was collected on the first Monday before the participants began their tasks, and there were three further data collection moments – T2 (after gratitude condition participants shared reflections on their experiences), T3 (one month post-T2), and T4 (two months post-T2).

In their analysis of data collected, the researchers sought to evaluate whether youth reporting low positive affect at T1, relative to those reporting high positive affect, would derive more benefit from the intervention at T2 and T3, and whether this would also be the case at T4. They constructed three separate hierarchical regression models

to answer these questions. They found support for positive affect as a moderator of the effects of the active condition on well-being. Specifically, participants reporting relatively low positive affect at T1 and who received the intervention reported increased levels of gratitude at T2 and of positive affect at T2 and T4 when compared with participants low in positive affect at T1 who were assigned to the control condition. Significant T1 positive affect interactions were found for T2 gratitude ($p < .01$), T2 positive affect ($p = .04$), and T4 positive affect ($p = .03$), while interaction effects were very close to statistical significance for T4 gratitude, T3 positive affect, and T3 negative affect. Further examination of the interaction effects, through simple effect analyses, showed that for the simple slope for one SD below the mean for T1 positive affect, the gratitude intervention significantly predicted more T2 gratitude than the control group and also approached significance in predicting more T2 positive affect. However, they stressed that it would not be accurate to conclude that participants higher in positive affect benefited more from the control condition, stressing that all simple effect analyses failed to reach significance for one SD above the mean for T1 positive affect. Therefore, only the simple slope for one SD below the mean for T1 positive affect moderated the intervention and associated outcomes, with this suggesting that participants low in T1 positive affect may be particularly responsive to the gratitude intervention, having derived the most benefit.

Against the backdrop of research suggesting young people who identify as materialistic – characterised for these purposes as subscribing to a lifestyle based on accumulating consumer goods above and beyond the point required to meet basic human needs – are more likely to be unhappy, report lower self-esteem, exhibit poor life satisfaction, and are more at risk for depression, Froh, Emmons, Card, Bono, and

Wilson (2011) undertook a study in the United States comparing school and life outcomes for adolescents high in materialism and adolescents reporting high levels of gratitude. There were 1,035 participants (mean age = 15.67, SD = 1.21, range = 14-19 years), drawn from grades 9-12 in one school. The sex breakdown was almost even – males accounting for 50.6% of the participant group. Materialism was assessed using the 15-item Material Values Scale, while gratitude was assessed using three measures – the GQ-6, the GRAT-short form, and the GAC. A range of other variables were also assessed, including academic achievement, life satisfaction, envy, depression, absorption and social integration, and socioeconomic status. With a view towards evaluating the measurement of the latent constructs, the authors conducted a confirmatory factor analysis. The correlations arising from this showed that materialism was associated with lower grade point average, higher envy, lower life satisfaction, and lower social integration and absorption, while gratitude had medium associations with higher grade point average and absorption, strong positive relations with life satisfaction and social integration, and medium associations with lower envy and depression, and that gratitude and materialism had a medium negative association with each other. Discussing their findings, the authors stressed that grateful adolescents performed better academically, were more socially integrated, reported higher absorption and life satisfaction, and were less envious and depressed than less grateful counterparts. These findings, they pointed out, underscore the benefits of gratitude in youth and also the desirability of seeking to foster gratitude among adolescents: “Thus, gratitude may aid flourishing in youth because it motivates them to fulfil basic needs of personal growth, relationships, and community – all of which reduce vulnerability to the main health risks they face” (p. 299).

D. Li et al. (2012) examined the relationship between gratitude and suicidal ideation and suicide attempts among a population of adolescents in China. This research involved 1,252 middle school students, with a mean age of 15 years ($SD = 1.20$, range: 12-19 years, 54.9% females). The researchers had three explicitly stated goals – to determine whether gratitude predicts less suicidality, to examine whether coping efficacy and self-esteem mediate the relationship between gratitude and suicidality, and to examine whether the path between gratitude and suicidality could be influenced by recent stressful life events. They measured gratitude using the GQ-6-Item Form, coping efficacy was assessed using the Coping Efficacy Scale, self-esteem was measured using the RSES, a 16-item stressful life events scale was used, and suicidal ideation and suicide attempts were assessed using two questions adapted from the Youth Self-Report.

They found that 19.4% of participants reported thinking about suicide, while 8% reported having attempted suicide in the previous six months. The researchers indicated that these findings were consistent with international reviews (e.g., E. Evans, Hawton, Rodham, & Deeks, 2005). After conducting logistic regression analyses, they found that gratitude significantly predicted both suicidal ideation ($b = -.33$, $SE = .08$, $p < .001$) and suicide attempts ($b = -.43$, $SE = .11$, $p < .001$), with significance holding up even when controlling for age, sex, and family socioeconomic status. Participants high in gratitude were found to be less likely to have suicidal ideation and suicide attempts over the preceding six months than those found to be low in gratitude.

Kleiman, Adams, Kashdan, and Riskind (2013) investigated the relationship between gratitude and grit, and suicidal ideation in a United States population sample. For their purposes, they described grit as a psychological strength linked to passionate pursuit of long-term goals, and doing so with perseverance. They stated that grit is related to personality traits like conscientiousness, but is a different construct in its own right, emphasising stamina in the long-term over short-term intensity. The primary focus of these authors' research was to look at meaning in life as a suicidal resilience factor, but acknowledging that this may be hard to modify, the authors chose to examine gratitude and grit as factors that, working together, build resiliency to suicide by increasing perceived meaning in life. The 209 participants were drawn from a college population – 84.2% female, mean age = 20.51, SD = 4.12, age range = 17-50. Participants completed measures of grittiness (Grit Scale), gratitude (GQ-6), meaning in life (MLQ), depressive symptoms (BDI-II), and current suicidal ideation (Beck Suicide Scale) on two occasions, with T1 and T2 separated by approximately four weeks. They analysed the data using negative binomial regression models and reported findings consistent with the hypothesis that gratitude and grit synergistically predict reduced levels of suicide ideation.

Lambert, Fincham, and Stillman (2012) conducted eight studies in the United States to test the theory that gratitude is related to fewer depressive symptoms, and that this is owed to positive reframing and positive emotion. A total of 2,973 participants (undergraduate college students) took part, with the total number of participants in each study ranging from 89 to 746. Females always outnumbered males by a wide margin, the age range across all studies extended from 17 to 37, and median ages ranged from 19 to 20.

Study 1 sought to examine the direct relationship between gratitude and depressive symptoms (the researchers referred to this as Path A), using a longitudinal design. Studies 2-5 dealt primarily with positive reframing (Path B) and studies 6-7 focused on positive emotion (Path C), while study 8 attempted to test paths A-C at the same time, to see if positive reframing and positive emotion both function as mediating variables when included in a single model. Participants in study 1 completed the GQ-6 and the 10-item version of the CES-D. Using hierarchical regression analysis to determine whether initial gratitude predicted T2 depressive symptoms scores when controlling for T1 depressive symptoms scores, they found support for the hypothesis – higher gratitude scores at T1 predicted fewer depressive symptoms six weeks later. Study 2 sought to provide evidence that trait gratitude was associated with positive reframing (measured using a four-item instrument) and that the latter was, in turn, associated with lower levels of depressive symptoms. Using hierarchical regression analysis, they found that higher gratitude expression at T1 was associated with lower scores for depressive symptoms at T2 (12 weeks later). The hypothesis that positive reframing acted as a mediator in this relationship was supported by subsequent analyses, using a bootstrapping method. Study 3 looked at whether positive reframing could be found to generate state gratitude, with the expectation being that positive reframing of negative life situations would lead to higher state levels of gratitude in an active condition population, relative to those assigned to a control condition. In the first instance, all participants were instructed to write three paragraphs about a major life challenge they had to overcome, and were then assigned to one of two conditions – the positive reframing condition, in which participants were asked to write about the positive aspects of the experience; and the control condition, with these participants instructed to write about notable aspects of the experience. Participants also

completed measures on state gratitude (two questions relating to the experience) and negativity of event (one question on negative feelings associated with recalling the event). They found support for the hypothesis, in that participants who positively reframed the experience reported feeling grateful for the negative event more than those who did not reframe it, and those who engaged in positive reframing reported less negative effects arising from recalling the event on current mood than those who did not reframe. While these findings supported the hypothesis, it was noted that a potential limitation was that thinking positive thoughts, as opposed to positively reframing negative events, might have been the key factor in increasing gratitude. With this in mind, study 4 sought to rule out that possibility. Here, the researchers hypothesised that those who wrote about their positive thoughts would be less likely to report negative perceptions of a negative event. Once again, participants were instructed to write about a major life challenge, with the randomly assigned experimental condition participants asked to reframe the negative event. On this occasion, control participants were randomly assigned to write about positive aspects of their favourite television programme. It was hoped this would ensure that any results gleaned for state gratitude and state depressive symptoms would be due to reframing, rather than positive thinking. Results were in line with those seen in study 3, encouraging the researchers to rule out the possibility that positive thinking was at play. Building on these findings, study 5 sought to establish a direct link between state gratitude and state depressive symptoms, hypothesising that the former would be causally related to the latter relative to a neutral control condition. The gratitude condition group was randomly assigned to think and write about what they regarded as their opportunities and blessings, while control group participants were asked to think and write about what they were learning in a human development class.

Participants completed a four-item version of the CES-D and also answered a question relating to current gratitude, with this latter assessment included for the purpose of checking whether the manipulation induced feelings of gratitude. They found that the manipulation had the desired effect, with active condition participants reporting higher gratitude ($M = 6.2$, $SD = 1.3$) than those assigned to the control condition ($M = 3.9$, $SD = 1.8$). Also, in line with the hypothesis, they found that participants put in a grateful mood went on to report fewer depressive symptoms.

Study 6 sought to test the indirect path involving positive emotion using a longitudinal design. It was hypothesised that the research team would find that positive emotion mediated the relationship between gratitude and depressive symptoms. Gratitude was measured using the GQ-6, depressive symptoms were assessed using a 10-item version of the CES-D, and positive emotion was measured using the 10-item positive dimension of the PANAS. Hierarchical regression analysis was used to determine whether initial gratitude predicted later depressive symptoms when controlling for T1 depressive symptoms ratings. They found that higher gratitude at T1 was associated with lower scores for depressive symptoms at T2 (12 weeks later). Using the same approach outlined above to test whether positive reframing had a mediating effect, they found positive emotion reached statistical significance as a mediator in the relationship between gratitude and depressive symptoms. However, they noted that this study was limited to correlational data and it was therefore unclear whether there was a causal relationship between gratitude and depressive symptoms, and depressive symptoms and positive emotion. The purpose of study 7 was to source experimental data to test path C in the theoretical model developed. For this purpose, the researchers followed a longitudinal, experimental design, including pre- and post-test assessments and random assignment to one of two

conditions. Active condition participants were asked to complete an online gratitude journal every day for a period of four weeks. Questions were included in the journal with a view towards triggering positive emotions in participants. Control participants assigned to a neutral condition were asked to keep a daily journal of insights gained in their college courses and to share these insights with a relationship partner. State depressive symptoms were measured using the state adapted version of the CES-D and positive affect was assessed using the positive items in the PANAS, while all participants were also asked to rate the quality of their sleep, with data accrued on this point used for control purposes. They found that while participants in the two conditions did not significantly differ in their depressive symptoms at T1 (gratitude: $M = 2.41$, $SD = 1.35$; control: $M = 2.7$, $SD = 1.2$), those who maintained the gratitude journal reported lower scores in depressive symptoms at T2 (gratitude: $M = 2.50$, $SD = 1.63$; control: $M = 3.0$, $SD = 1.2$). They also found that gratitude condition participants ($M = 27.4$, $SD = 9.4$) and control condition participants ($M = 26.8$, $SD = 9.8$) did not differ greatly on positive emotion scores at T1, but at T2 gratitude condition participants ($M = 28.6$, $SD = 8.9$) reported marginally higher scores than control group counterparts ($M = 25.1$, $SD = 10.0$). They again found positive emotion functions as a mediator between gratitude and depressive symptoms, concluding that increasing the frequency of grateful thoughts over time either increased or prevented a decrease of positive emotion and, in turn, prevented an increase in depressive symptoms. Finally, study 8 sought to test paths A-C at the same time to see if positive reframing and positive emotion both function as mediators if included in a single model. They found that both path B and path C simultaneously performed a mediating function in the relationship between gratitude and depressive symptoms.

Overall, Lambert et al. (2012) concluded that their research supported the contention that gratitude offers practical benefits on an individual level. They stressed that a finding of particular note was that gratitude decreased or prevented the increase in reports of symptoms of depression. They also found evidence indicating that depression and gratitude relate through two mechanisms – with gratitude prompting individuals to positively reframe otherwise negative experiences, and also increasing or preventing decreases in positive emotions, with the presence of the latter mechanism related to the reporting of fewer depressive symptoms.

As mentioned earlier in Froh et al. (2008), gratitude studies focusing on adolescent populations are a relatively new development. In an entry written for *Encyclopedia of Adolescence*, Froh and Bono (2012) refer to gratitude in adolescence as “an understudied virtue” (p. 1225). In this article, they note, as also referred to at the start of this chapter, that while gratitude has tended to be ignored throughout the history of psychology, a recent surge of interest has brought the topic more into the spotlight, and that adult populations have more often than not been the target. They note that a PsycINFO search using “gratitude” and “adolescence” as search terms offered up only eight papers, while a slightly modified search using “gratitude” and “adolescents” produced just 17. While pointing to two studies examined in this chapter - Froh et al. (2008) and Froh et al. (2009) – as the most convincing published evidence that gratitude interventions can impact positively on the well-being of young people, Froh and Bono maintained that further research in this area is vital if we are to understand and promote the full range of possibilities in terms of youth development, i.e., encouraging a process whereby young people flourish into happy, productive, and contributing members of society.

6.3 Summary

Gratitude is an emotion which seems to be felt both frequently and strongly by most people (McCullough et al., 2002). Despite this, it received relatively little attention from psychology until recent years, with the emergence of positive psychology signalling an increased emphasis in gratitude-related studies (Wood et al, 2010).

McCullough et al. (2001) characterised gratitude as both a response to and motivator of moral behaviour. This perspective suggests that people will respond with an expression of gratitude when other individuals in the immediate environment behave in ways that promote their well-being. This view characterises the parties in this social situation as beneficiaries and benefactors, with the expression and receiving of gratitude said to encourage further displays designed to promote the well-being of others.

Wood et al. (2008) highlighted the trait and state levels associated with gratitude. They maintained that trait level gratitude refers to individual differences in which related affects and moods are experienced on a day-to-day basis, while state gratitude relates to the emotion felt after receiving aid and which motivates the reciprocation of aid. Wood et al. (2010) stated that there are differing thoughts on the nature of trait gratitude, drawing attention to findings reported by Emmons and McCullough (2003) which noted that not all gratitude-inducing events involve external benefactors and not all gratitude is externalised towards another source. With this in mind, Wood et al. (2010) suggest dispositional level gratitude may be one element of a wider life orientation towards registering and feeling appreciation for positive stimuli in the world.

Emmons (2012) drew attention to gratitude's dual meaning, suggesting it can be understood both from worldly and transcendent perspectives. From the worldly perspective, he describes it as a social emotion, assisting in the regulation of human relationships, while from the transcendent view, he notes the prominent position in which gratitude has been placed throughout history in both theistic and spiritual traditions.

McCullough et al. (2001) offered three reasons why gratitude merited more attention than it had received up to that point – the frequency with which such feelings are reported, its cross-cultural expression (meaning it may be useful in investigations of similarities and differences between populations), and its possible adaptive function.

The link between gratitude and well-being has been explored by many researchers over the last decade or so. In a recent review, Wood et al. (2010) stated that the connection between both remains strong irrespective of how well-being is defined. Emmons (2012) stated that gratitude forms a vital element in the foundation to well-being and mental health at all points along the lifespan. Emmons and McCullough (2003) reported findings on how a grateful outlook can impact on psychological and physical well-being. In their research, participants were encouraged to actively think about things in life for which they were grateful, and it was found that experiencing gratitude can make individuals feel good in the present, and also makes those same people more likely to feel good in the future.

Froh et al. (2008) also conducted a counting blessings intervention, but among an adolescent population. The authors billed this as the first occasion on which such research had been done with non-adults. They reported that gratitude condition participants reported more gratitude and significantly less negative affect relative to other conditions, both at immediate post-test and follow-up, three weeks later.

Froh et al. (2009) examined whether positive affect impacted upon the outcome of a gratitude intervention conducted among children and adolescents. They found that participants reporting relatively low positive affect at T1 and who were assigned to the active condition tended to report increased levels of gratitude at T2 and positive affect at T2 and T4 when compared to control condition participants who reported low positive affect at T1. The study suggested that participants low in positive affect at baseline may be particularly responsive to a gratitude intervention, while active condition participants reporting relatively high positive affect initially may not benefit to the same extent, as there is less leeway for upward movement.

Froh and Bono (2012) referred to gratitude in adolescence as “an understudied virtue” (p. 1225), while maintaining that Froh et al. (2008) and Froh et al. (2009) offer the most convincing evidence to date that gratitude interventions can help facilitate increases in well-being among young people. They call for further research in this area, stating it is necessary as part of a process through which young people can flourish into happy, productive, and contributing members of society.

7. MINDFULNESS

Having addressed relevant cognitive variables and gratitude during the preceding two chapters, here we will look at mindfulness as a potentially useful predictor of well-being. Initially, we will look at the origins of mindfulness in Buddhist traditions, before examining how it has come to be incorporated into Western thought, and from there consider research evidence on the potential benefits associated with the practice.

7.1 Background and definitions

Mindfulness has its roots in Eastern traditions and is most closely associated with Buddhist contemplative practices. In this setting, mindfulness relates to self-directed behaviour which focuses on the active cultivation of conscious attention and awareness. From this perspective, Nyanaponika Thera (2001) describes mindfulness as a form of bare attention, “the clear and single-minded awareness of what actually happens to us and in us, at the successive moments of perception” (p. vii), while Hanh (1976) strikes a similar note when defining mindfulness as “keeping one’s consciousness alive to the present reality” (p. 11).

Kabat-Zinn (2003) outlines the 2,500 years-long history of mindfulness practice, highlighting its central role in Buddhist meditation traditions and adding that the ideas and principles behind it are intrinsic to the key teachings of the Buddha. These teachings are often described by the Sanskrit word ‘dharma’, which, he states, carries the meaning of lawfulness (in the sense of the word being used in a context such as ‘the law of physics’) or can also be understood as ‘the way things are’. Elaborating further on the idea of dharma, Kabat-Zinn (2003) refers to it as “an innate set of empirically testable rules that govern and describe the generation of the inward, first-

person experiences of suffering and happiness in human beings” (p. 145). Against this backdrop, he suggests that dharma should not be considered an exclusively Buddhist notion, being better regarded as a concept with relevance and application for all humanity. He goes on to characterise it as a coherent description of the nature of mind, emotion, and suffering. As an extension of this point, Kabat-Zinn states that, despite being at the centre of Buddhist tradition, at its heart there is “nothing particularly Buddhist” (p. 145) about mindfulness. He stresses that mindfulness, because it relates to attention, has to be viewed as universal, in that we are all mindful to varying degrees in every moment. Against this backdrop, Kabat-Zinn describes mindfulness as “an inherent human capacity” (p. 146). In making this point, he is not attempting to remove mindfulness from a Buddhist context, but is instead seeking to make the point that the emphasis on moment-to-moment awareness that we associate with the practice was not somehow invented by Buddhism. Instead, he describes mindfulness as “the fundamental attentional stance underlying all streams of Buddhist meditative practice” (p. 146) and stresses that it has received its most overt and deliberate articulation and development within the context of Buddhist tradition over a period of more than two millennia. He also states that over this period of time, one of the primary contributions of the Buddhist tradition has been to highlight uncomplicated and effective methods for developing and refining mindfulness, with a view towards bringing it into every aspect of life.

In the context of modern Western thinking, Kabat-Zinn (2003) offers an operational working definition of mindfulness as “the awareness that emerges through paying attention on purpose, in the present moment, and nonjudgmentally to the unfolding of experience moment by moment” (p. 145). His definition is not the only one that has

been proposed, but Kabat-Zinn has become synonymous with mindfulness over a period of decades and was instrumental in introducing its practices to Western societies, and as such his terminology has proven influential.

However, other definitions have been put forward in recent years, many of which constitute variations on the same themes, with only subtle differences in emphasis. Bishop et al. (2004) characterise mindfulness in psychology as “an approach for increasing awareness and responding skilfully to mental processes that contribute to emotional distress and maladaptive behavior” (p. 230). On a broader level, they propose a two-component model – the first focusing on the self-regulation of attention, with a view towards maintaining focus on immediate experience, thus facilitating increased recognition of mental events moment-to-moment; and the second involving the adopting of an orientation towards ongoing experiences characterised by curiosity, openness, and acceptance.

Jha, Krompinger, and Baime (2007) offered a basic definition of mindfulness as paying attention in the present moment. However, they also offered a more nuanced interpretation in which they stated that mindfulness training facilitates circumstances in which attention becomes receptive to the entire field of awareness and remains in that open state so it can be steered towards moment-to-moment experienced sensations, thoughts, emotions, and memories.

In a recent review, Chiesa (2013) highlighted the lack of unanimity on mindfulness definitions and positions this within the context of the increased interest in empirical investigation in this area over the last decade or so, suggesting it is surprising that

more effort has not been deployed in attempting to reach consensus on an unequivocal operationalisation of mindfulness in terms of modern Western psychology.

Highlighting the variation that exists, the author points to quantitative definitions and related measures which conceive of mindfulness as either a single-faceted or multifaceted state, while also directing readers' attention to the question of whether mindfulness is a state, a trait-like quality, or both. Chiesa feels that modern definitions that regard mindfulness as a single faceted trait with the emphasis on attention centred on the present stand in "stark contrast with the complex and multifaceted definitions of mindfulness employed by classical authors" (p. 258). He states that while such a definition may seem feasible for a Western audience heretofore not familiar with the concept of mindfulness, classical thinking has it that long-term training would be required before any in-depth experience and understanding of mindfulness could be credibly claimed to have been achieved. He adds that while there is relative agreement in the Western context on defining mindfulness as present moment awareness/attention, the Buddhist view would have it that attention and awareness are inherent in any discriminative mental state and should therefore be considered as preconditions to rather than equivalents of mindfulness.

K.W. Brown and Ryan (2004) noted that it was precisely because of successes and advances in mindfulness research that it became increasingly important to exercise care in defining and measuring the construct. However, they also stated that this task was made more challenging because "mindfulness is a deceptively simple concept that is difficult to characterize accurately" (p. 242). In earlier work, K.W. Brown and Ryan (2003) described mindfulness as an attribute of consciousness, one which is believed to promote well-being. They added that it can be considered an enhanced

attention to and awareness of ongoing, moment-to-moment experiences in day-to-day reality.

In an overview of the state of research in the area, M.T. Greenberg and Harris (2012) stated that in recent years there has been “an explosion of interest in... mindfulness strategies” (p. 161), with a view towards supporting wellness in people. They noted that against the backdrop of positive results seen among adult populations in promoting health, relieving pain, and tackling depression and anxiety, attention has recently begun to focus on mindfulness-based interventions for children and young people. They stated that the increased research focus on mindfulness for young people has not come about solely as a response to positive results with older populations, but should also be viewed against the backdrop of societal concerns about the physical and mental health of young people and negative outcomes associated with difficulties on these separate, but related fronts, as detailed here in earlier chapters.

M.T. Greenberg and Harris (2012) also view the recent emphasis on mindfulness interventions among youth as being related to calls for new approaches to be developed to foster health and well-being among this age cohort, along with a desire to use new methods geared towards developing habits of mind and behaviour that lend themselves to fostering resilience in the face of life adversities, with this point made by Shonkoff, Boyce, and McEwen (2009). The latter researchers made their call against the backdrop of research to the effect that adult diseases can often be traced back to developmental and biological disruptions which first occurred during the early years of life, e.g. Schilling, Aseltine Jr, and Gore (2007) found adverse childhood experiences were strongly associated with depressive symptoms in early adulthood.

As detailed in an earlier chapter, findings such as these highlight the potential lifelong benefits of early interventions designed to alleviate symptoms of mental disorders or prevent their occurrence in the first instance.

7.2 Mindfulness-Based Stress Reduction

Kabat-Zinn has developed one of the most used mindfulness-based approaches – Mindfulness-Based Stress Reduction (MBSR; Kabat-Zinn, 1990). The three key components of this group-based intervention programme are sitting meditation, Hatha Yoga, and body scan, with the latter element referring to a sustained mindfulness practice in which attention is directed throughout the body on a sequential basis, body part by body part (Kabat-Zinn, 2003). The stated objective is that through repeated mindfulness practice, individuals will become more able to recognise their habitual and maladaptive thinking patterns and behaviour, and arising from that increased awareness break those repeating cycles. Initially developed in 1979 and offered through an outpatient stress reduction clinic at the University of Massachusetts Medical Center, in the United States, Kabat-Zinn (2003) explained that the programme was originally conceived as having a dual purpose. The first was to establish whether it would be possible to train medical patients in an intensive form of mindfulness meditation and its applications to the stress, pain, and illnesses they were experiencing in their lives. He emphasised that the intervention needed to be presented in such a manner as to be free of any potential cultural, religious, and ideological factors related to its Buddhist origins, as the purpose of MBSR was to create a space within which people could engage and experiment with novel and potentially effective ways of confronting and relieving suffering and distress in body and mind, while also recognising the body/mind connection as they did so, and not to

teach Buddhism or to make participants meditation experts. The second initial purpose was to look at MBSR as a model, in that if it was found to be successful in its initial setting and acceptable both to participants and referring physicians, then the next step would be to transfer it to other settings in which stress, emotional and physical pain, or illness and disease were major concerns. He notes that this is exactly what happened, and that MBSR programmes have subsequently been offered in a range of settings, both clinical and non-clinical, including hospitals, medical centres, schools, workplaces, and prisons.

Kabat-Zinn (2003) also stressed the need for any would-be MBSR instructors to practice the relevant mindfulness techniques in their own life prior to and while attempting to lead others in cultivating those same skills. He added that mindfulness meditation is not meant to be a method practiced occasionally or over a brief period of time when feeling stressed; more correctly, it should be practiced on an ongoing basis. He describes it as “a way of being” (p.149) and that therefore it takes effort to cultivate and develop over time. Chiesa (2013), as mentioned previously, made a similar point when referring to classical thinking on long-term training and developing an understanding of mindfulness.

Specific research on the effectiveness of MBSR will be presented later in this chapter.

7.3 Measuring mindfulness

As interest in mindfulness in the context of psychology has increased, the issue of measurement has become a key consideration. As such, a number of questionnaires have been devised. The first of these to be properly validated was the Mindfulness

Attention Awareness Scale (MAAS; K.W. Brown & Ryan, 2003). This 15-item instrument has been widely deployed and is perhaps the best known of all mindfulness measures currently used in research. A sign of how seriously mindfulness is being taken as an intervention with potential positive benefits for participants in a range of settings, both clinical and non-clinical, has been the number of questionnaires seeking to measure it or aspects of it that have been developed and validated in the decade since the MAAS began to be used in research. Among these are the Cognitive and Affective Mindfulness Scale (CAMS), Five Facet Mindfulness Questionnaire (FFMQ), Freiburg Mindfulness Inventory (FMI), Kentucky Inventory of Mindfulness Skills (KIMS), Philadelphia Mindfulness Scale (PHLMS), and Toronto Mindfulness Scale (TMS).

7.4 Mindfulness and well-being

Keng, Smoski, and Robins (2011) looked at the effects of mindfulness on psychological health, and did so by conducting what they termed as “a comprehensive narrative review” (p. 1042) of pre-existing empirical studies. This approach saw the authors examine a number of different approaches, including cross-sectional, correlational research on associations between mindfulness and a range of indicators of psychological health, and controlled studies on the effects of mindfulness-based interventions on psychological health.

Keng et al. (2011) reported that many studies have been conducted looking at self-reported mindfulness and psychological health in diverse populations, e.g., undergraduate college students, community-residing adults, and diverse clinical populations, including cancer patients, psychiatric patients, and individuals with a

history of depression. They highlighted findings showing that trait mindfulness has been positively associated with a number of psychological variables, including life satisfaction, agreeableness, conscientiousness, self-esteem, optimism, and pleasant affect; while significant negative correlations have been reported with depression, neuroticism, absent-mindedness, rumination, cognitive reactivity, and dissociation.

With regard to mindfulness-based interventions, they analysed findings from 16 MBSR randomised controlled trials, 14 Mindfulness-Based Cognitive Therapy (MBCT) trials, 13 Dialectical Behaviour Therapy (DBT) trials, and 11 Acceptance and Commitment Therapy (ACT) trials. The authors found a growing body of support for the efficacy of all four approaches. While the MBCT and DBT studies mainly focused on participants vulnerable to or with a history of depression and parasuicidal behaviour respectively, MBSR has been applied among wider groups, with the growing body of findings reporting reduced self-reported levels of a number of negative variables, including anxiety, depression, anger, rumination, general psychological distress, and cognitive disorganisation, and improved ratings related to positive affect, sense of spirituality, empathy, sense of cohesion, mindfulness, forgiveness, self-compassion, life satisfaction, and quality of life.

Keng et al. (2011) concluded that existing literature supported the contention that mindfulness and its cultivation can aid adaptive psychological functioning. They acknowledged the presence of methodological limitations under each heading they examined, but insisted that what they termed as “a clear convergence of findings” (p. 1052) in the different types of research examined suggested that mindfulness is

positively associated with psychological health and that mindfulness training may facilitate positive mental health outcomes.

Grossman, Niemann, Schmidt, and Walach (2004) conducted a meta-analysis into the health benefits associated with MBSR and related strategies. Twenty studies were included in their analysis, with these either using the structured MBSR programme or mindfulness-based procedures as the central component of a group approach to impact positively on health-related measures. Eligibility criteria included that interventions had to be group taught (i.e., no individual training); programmes had to operationalise mindfulness as moment-to-moment awareness cultivated with a non-judgemental attitude, they had to teach formal meditation techniques, and the importance of ongoing practice had to be stressed; courses had to be of from 6-12 weeks duration with approximately 2.5 hours of instruction per week; quantitative outcome measures were available; outcome measures were sourced from standardised and validated scales; and post-intervention (and not necessarily follow-up) data had to be provided and assessed. While 20 studies met all 11 criteria, another 44 were excluded for not doing so. Reports included in the analysis involved 1,605 participants, with the samples including a mixture of clinical and non-clinical populations. They found that the available evidence suggested that MBSR is useful as an intervention targeting a broad range of disorders and problems. Ten of the studies included in the analysis included control groups ($n = 771$). For mental health variables featured in these studies, the mean effect size was Cohen's $d = .54$, reported as being significant and of medium strength. Five of these studies also reported data categorised by Grossman et al. under the heading of physical health ($n = 203$), with a mean effect size of $d = .53$, similar to that found for mental health variables. For

observational studies (18 investigations, $n = 894$), the authors reported mean effect sizes of $d = .50$ (mental health) and $d = .42$ (physical health). The authors noted that the consistent and relatively strong effect sizes found suggested that mindfulness training may enhance general features of coping in everyday life, as well as for conditions relating to serious disorder or stress.

Hofmann, Sawyer, Witt, and Oh (2010) conducted a meta-analysis on the effect of mindfulness-based therapy on anxiety and depression. Their analysis included 39 studies, mainly either MBSR or MBCT, involving 1,140 participants. Those who received the therapy were all in clinical settings. They found that effect size estimates suggested that mindfulness-based therapy was moderately effective for improving symptoms of anxiety (Hedges's $g = .63$) and mood symptoms ($g = .59$) from pre- to post-treatment. For participants with both anxiety and mood disorders, mindfulness-based treatment produced effect sizes of .97 and .95 respectively. The authors concluded that the results suggest that mindfulness is a promising intervention for treating anxiety and mood problems.

7.5 Mindfulness and adolescents

As outlined previously, mindfulness-related research has reported encouraging findings among adult populations. Arising from this, attention has turned in recent years to exploring the potential benefits of such programmes for young people, in both clinical and non-clinical settings.

Burke (2010) conducted a preliminary review of mindfulness-based approaches used in research with children and adolescents, restricting her focus to interventions based

on MBSR or MBCT, as these two approaches emphasise using mindfulness meditation practices to develop mindfulness skills. The author noted that the field was an emerging one and therefore not yet in a position to point to a base of generalised empirical evidence. She stressed that it was not possible to conduct a meta-analysis or calculate an overall effect size due to the wide variability of methodologies and data reporting strategies across the 15 studies examined. She described the limited pool of available research as single case and small sample feasibility studies with no objective outcome measures, adding that some had only partial data reported and that there were multiple variations in how the respective MBSR and MBCT curricula were implemented. Sample sizes in the studies examined ranged from 1 to 228, while the age of participants was 4-19 years, and she also noted that in those studies which reported sex, males accounted for 24.1-71% of the participant populations. Burke reported that all studies trained participants in what were termed 'mindfulness meditation practices', with, in line with the reference above to variations in programme implementation, some interventions using elements of MBSR. Six studies used pre-post between groups design, with four reporting randomisation to control groups, while two did not specify randomisation. The other studies reviewed used pre-post within-participant or multiple base-line across participant designs, or reported observational and informal participant reports. Of those studies that reported follow-up data, intervals ranged from eight weeks to three years. DVs included self-reports and also reports from parents/teachers on relevant variables, e.g., anxiety, depression, and social skills. The author added that five studies reported some or all effect sizes, while others report p values, percentage data, trends, and also clinical or informal observations.

Burke (2010) presented general findings highlighting that the studies looked at offered acceptable interventions that led to no adverse effects in participants. Available data on changes reported at post-intervention offered effect sizes ranging from Cohen's $d = -.2$ to 1.4 – from small to large. The author concluded that the state of the field at that time offered support for the feasibility of mindfulness-based interventions with young people. However, while she billed studies looked at as “pioneering work” (p. 142) and providing a reasonable base of support for such interventions, the author was also critical of some of the 15 studies, citing weak methodologies and design, and stressing that these shortcomings legislated against attempting to generalise the findings to a wider population of children and adolescents.

Weare (2013) conducted a literature review looking at the state of current evidence for the potential benefits of teaching mindfulness to young people. She examined approximately 20 studies which she labelled as significant and good, with the criteria for those descriptors being the number of participants and publication in peer reviewed journals. There was some crossover with Burke (2010), with the later paper including 8 of the 15 papers included in the earlier review. Weare noted that the United States leads the way, both in terms of the development of universal mindfulness programmes and also in attempts to rigorously evaluate those programmes. She added that the emphasis on mindfulness in that country had led to the development of structured programmes such as Inner Kids and Hawn Foundation's Mindfulness Education/MindUp, with both of these having also been used outside the United States. A randomised controlled trial of the InnerKids intervention with 7- to 9-year-olds reported parent and teacher-rated improvements in

executive function (Flook et al., 2010). A paper on the effectiveness of the Mindfulness Education/MindUp programme, which seeks to facilitate the development of well-being traits using mindfulness exercises, showed improvements in behaviour, attention, and focus among a group of 9- to 13-year-olds (Schonert-Reichl & Lawlor, 2010). However, Weare noted that this study was not methodologically robust, involving a teacher report (as opposed to direct observations of student behaviour), and a basic pre- and post-design, with the authors acknowledging that the absence of an extended follow-up assessment constituted a limitation of their study. Weare also highlighted the Learning to BREATHE curriculum, informed by MBSR and targeted at teenagers. Broderick and Metz (2009) evaluated the programme in a non-randomised, quasi-experimental pilot trial with 120 school-based American females (aged 17-19), reporting decreases in negative affect, tiredness, and aches and pains, and improvements in calm, relaxation, self-acceptance, emotional regulation, awareness, and clarity. Weare also highlighted the UK-based .b pilot curriculum, developed by the Mindfulness in Schools Project. The title of the programme – pronounced as *dot-be* – stands for ‘Stop, Breathe, and Be’, with these words taken to indicate the act of mindfulness itself. A study undertaken by Huppert and Johnson (2010) saw a controlled trial of the .b curriculum conducted with 173 males in two English schools (aged 14-15) across 11 classes, with six in the active condition and five assigned to the control group. The intervention was delivered across four weeks, with one session of basic mindfulness training held per week. They found significant effects for mindfulness, ego-resilience, and well-being among students who regularly did 10 minutes of home practice per day, with these individuals outperforming those who did not practice.

Based on findings such as those outlined in the preceding paragraph, Weare (2013) concluded that mindfulness interventions for young people can be effective in promoting a range of desirable outcomes. She noted that when the techniques of mindfulness are imparted skilfully to participants, it can lead to improvements in mental health, well-being, mood, self-esteem, self-regulation, positive behaviour, and academic learning.

Zoogman, Goldberg, Hoyt, and Miller (2014) conducted what they stated to be the first meta-analysis on mindfulness meditation with youth, encompassing work undertaken from 2004 to 2011. Becker's (1988) d was the primary effect size used in effect size aggregation and omnibus analysis, with an imputed active control size calculated for studies that either had a no-treatment control group or did not include a control group. Key inclusion criteria were that articles had to be published in a peer-reviewed journal in English, participants had to be under 18 years of age at the initial assessment, and the study needed to use a mindfulness-based intervention as its chief component (e.g., MBSR or MBCT). Arising from this, 20 studies were included in the meta-analysis, with some crossover between Zoogman et al., Burke (2010) and Weare (2013). They reported that the primary omnibus effect size differed significantly from zero ($d = .23$, 95% CI [0.148, 0.305], $p = .0001$), indicating that mindfulness conditions tended to be associated with significantly greater improved scores on outcome measures (e.g., psychological symptoms, such as depression; measures of general functioning, such as social skills; and attention) relative to active control conditions. The authors acknowledged that the effect size was quite small, but they stressed it was nonetheless noteworthy given that it suggested the superiority of mindfulness conditions. They also reported that the effect size for clinical populations

was in the moderate range, and almost three-times that achieved with non-clinical samples. This finding did not question the merit of conducting mindfulness-based interventions with non-clinical populations, but instead pointed out that such studies may prove to be particularly beneficial in tackling symptoms of psychopathology.

Raes, Griffith, Van der Gucht, and Williams (2013) set out to conduct what they billed as the first randomised controlled trial assessing the efficacy of a group mindfulness programme designed to reduce and prevent depression in an adolescent school-based population, combining elements of MBSR and MBCT. They worked with five schools in the Flanders region of Belgium, with four of the schools each offering two or three pairs of parallel classes, spread out over two academic years, which created nine pairs of classes ($n = 315$). Within the pairs, one class was randomly assigned to the mindfulness condition, while the other was assigned to the control condition (no intervention). Classes were assigned to the respective conditions using an online number generator. The authors noted that the fifth school lacked sufficient numbers to assign full classes to the two conditions, so individual classes were split in half, creating a further three pairs of intervention and control group participants ($n = 93$). In total, the randomisation process created 12 pairs of mindfulness and control groups ($n = 408$; mindfulness $n = 201$; control $n = 207$). The authors detailed that participants were drawn from third through to sixth year in the five secondary schools, meaning participants were generally aged 14-17 years. There were three pairs of groups drawn from year three (mean age = 14), four pairs from year four (mean age = 15), four pairs from year five (mean age = 16), and one pair from year six (mean age = 17). For mindfulness, group sizes ranged from 10 to 24 ($M = 16.8$, $SD = 4.9$), while control group sizes ranged from 12 to 24 ($M = 17.3$; $SD =$

4.8). The mindfulness sessions were held weekly during school hours for a period of eight weeks, with each session lasting 100 minutes, while control group participants continued to attend regularly scheduled classes. Individual sessions focused on a specific theme, e.g., “attention to the breath and the moment” (session one), “attention to the body and pleasant moments” (session two), “attention to thoughts and emotions” (session five), and “attention to your attitudes and your moods” (session seven). Participants completed the Depression Anxiety Stress Scales (DASS-21) on three occasions – before the beginning of the programme (T1), after the completion of the final mindfulness session (T2), and six-months post-intervention (T3). This measure consists of three seven-item scales, assessing depression, anxiety, and stress symptoms respectively. The depression scale (DASS-21-D) was used to measure outcomes. The authors found that active condition participants reported lower levels of depression at T2 and T3 relative to baseline comparison with the control group participants. Hierarchical linear modelling was used to analyse the DASS-21-D data. They found that mindfulness group participants reported lower levels of depression at T2 and T3 relative to baseline scores, while there was little change detected across the three data gathering moments among control group participants. With a view towards examining the extent of the intervention’s impact, the authors then used repeated measures t-tests and sought Cohen’s d effect size values. They found a small to medium, but statistically significant, reduction in depression scores from baseline to T2 ($t(181) = 4.4, p < .001$, Cohen’s $d = .32$) and also from baseline to T3 ($t(166) = 4.0, p < .001$, Cohen’s $d = .31$). No significant movement was detected over time in the control condition. The authors concluded that their research suggested that school-based mindfulness programmes can be useful as part of a drive to reduce and prevent depression in adolescents.

Kuyken et al. (2013) conducted a feasibility study with a view towards assessing the suitability and efficacy of a schools-based universal mindfulness intervention – the Mindfulness in Schools Programme (MiSP) - to boost mental health and well-being among young people. A total of 522 participants, aged 12-16, recruited from multiple schools in England took part in the study. They justified targeting this age group on the basis that “the 12-16 range represents a key developmental window for self-regulation and is a period when young people need to negotiate many academic and social stressors for the first time” (p. 126). This statement underscores points made earlier in this thesis, when highlighting the importance of the adolescent years in terms of normative development, and the opportunities and risks associated with this period.

Kuyken et al. (2013) pursued a non-randomised controlled parallel group approach, with active condition participants being compared with a matched control group and outcomes assessed at baseline (pre-intervention), post-intervention, and follow-up (three months after the initial wave of measurement). Six schools hosted the MiSP programme, with 256 participants receiving the curriculum, and 266 participants in six other schools matched for control purposes. The intervention sessions were incorporated into the weekly timetable by active condition schools. The nine-week programme incorporated elements drawn from MBSR and MBCT, and used age-appropriate resources in an interactive, experiential, and lively teaching setting. The MiSP curriculum seeks to impart some of the key elements of mindfulness – learning to direct attention to experiences in the moment, while cultivating open-minded curiosity and acceptance. The stated intention is that by encouraging young people to engage with mindfulness and work with mental states, everyday life, and stressors, a

process is facilitated which lends itself to improved well-being and mental health. Well-being was assessed at each of the data collection points using the 14-item Warwick-Edinburgh Mental Well-Being Scale (WEMWBS), while two measures were used to assess mental health – the Perceived Stress Scale and the eight-item CES-D. Mindfulness practice was assessed only among active condition participants, and was done so by asking five questions about sustained use during the three months following completion of the MiSP programme in schools. At the three month follow-up, researchers had data from 95.3% of active and 85% of control participants. Random-effects linear regression models were used to assess the correlation between outcomes for participants in the same school/cluster, while the same approach was used to examine whether participants showing the greatest use of mindfulness practices reported better outcomes. Prior to adjusting their analyses, the researchers found little evidence of a difference between the two groups at post-intervention on mental health and well-being. However, after adjusting for sex, age, and ethnicity, they found strong evidence of lower depression scores among participants who received the mindfulness programme ($p = .004$). At the three-month follow-up, adjusted analyses suggested that, when compared with the control group, mindfulness participants exhibited increased well-being ($p = .05$), reduced stress ($p = .05$), and lower depressive symptoms scores ($p = .005$). They also reported that there was evidence to support the contention that those participants who reported more frequent engagement in mindfulness practices had higher well-being scores at post-intervention ($p = .003$) and three-month follow-up ($p < 0.001$), lower depressive symptoms scores at post-intervention ($p = .04$), and lower stress at follow-up ($p = .03$).

However, M.T. Greenberg and Harris (2012) urged caution in the implementation of mindfulness-based strategies for young people, suggesting that while there is encouraging evidence as to the potential benefits of such programmes, a body of work has yet to emerge which would justify the level of enthusiasm expressed for such interventions among youths. In their review of the current state of research on contemplative practices with young people, the authors stated that most of the mindfulness and yoga research thus far conducted has been with participants in middle childhood and adolescence, but note that quality issues have arisen around the proper reporting of instructor qualifications, attrition rates, randomisation methods, and approaches used to analyse data. They also noted that previous reviews of the area reported that very few meditation-based intervention trials have been conducted with universal populations of young people. However, it is acknowledged that relevant findings report that mindfulness practice may help improve the social skills of school-age children and also school-related functioning. That said, the authors stressed that most such studies have issues around design, sample size, and measurement, and this, they maintain, impacts negatively on the confidence that can be attached to such findings. While calling for the development of a more rigorous scientific base, M.T. Greenberg and Harris (2012) also concluded that current evidence suggested that mindfulness-based interventions with young people may well offer beneficial outcomes.

7.6 Summary

Mindfulness is closely associated with Buddhist contemplative practices, and relates to self-directed behaviour focusing on the active cultivation of conscious attention and awareness. In the modern Western context, Kabat-Zinn (2003) has offered a working

definition emphasising the awareness that emerges through the act of paying attention to the unfolding of experience moment by moment.

Kabat-Zinn (2003) highlighted the 2,500 years-long history of mindfulness practice, noting its central role in Buddhist meditation traditions. However, he also insists that there is nothing uniquely Buddhist about mindfulness, instead regarding it as an inherent human capacity, albeit one most deliberately articulated and developed within the context of Buddhist traditions.

M.T. Greenberg and Harris (2012) noted that there has been a surge in interest in recent years as it relates to mindfulness programmes being used to support wellness in children and adolescents. They noted that this interest is motivated not just by encouraging results in older age groups, but also because of the perceived need for wellness interventions with young people.

Kabat-Zinn (1990) has developed one of the most used mindfulness-based approaches – MBSR. The three key components of this group-based programme are sitting meditation, Hatha Yoga, and body scan. It is hoped that through repeated mindfulness practice, individuals will become more able to recognise their own habitual and maladaptive thinking patterns and behaviour, and arising from that increased awareness break those repeating cycles.

Grossman et al. (2004) conducted a meta-analysis into the health benefits associated with MBSR and related strategies, reporting the presence of consistent and relatively strong effect sizes, with those findings suggesting that mindfulness training may

enhance coping skills for everyday life and also when confronted with serious disorder or stress.

Keng et al. (2011) conducted a review examining the effects of mindfulness on psychological health among adults in clinical and non-clinical settings. Their analysis highlighted how trait mindfulness has been positively associated with several psychological variables, e.g., life satisfaction, and negatively correlated with depression.

Burke (2010) and Weare (2013) conducted reviews looking at the state of evidence on the benefits of mindfulness interventions among young people. Both acknowledged that this is a relatively new area and that therefore the pool of available studies is still relatively small and sometimes accompanied by methodological concerns, but both reviews concluded that the existing evidence points to strong potential. Zoogman's (2014) meta-analysis offered similar conclusions, pointing to an effect size which, though relatively small, clearly suggested that participants in active mindfulness conditions tend to fare better on outcomes measures than control group counterparts.

M.T. Greenberg and Harris (2012) advised caution in the implementation of mindfulness-based strategies for youth, noting that a deep body of work has yet to emerge to confirm the enthusiasm sometimes expressed around such strategies. However, even in urging caution, these authors acknowledged that encouraging evidence exists and that such interventions may well offer beneficial outcomes.

8. CONTROL VARIABLES

In the chapters up to this point, it has been detailed that for the purposes of this research into well-being in adolescence, well-being is being operationalised as subjective happiness, depressive symptoms, and life satisfaction. In the course of this review of relevant literature, three dimensions of potential interest emerged – mindfulness, gratitude, and cognitive-behavioural variables. All lend themselves to interventions designed with a view towards enhancing adolescent well-being. Reporting on the outcome of those interventions will form the bulk of the results section in this thesis; however, before proceeding to that material, it is necessary to focus on the initial survey which was conducted with a view towards assessing the associations between the three well-being variables and a range of other variables capturing the intervention-compatible dimensions. That being the case, in this chapter, we will look at the control variables used in the survey – personality and sex. Specifically, we will look at literature pointing to the nature of the relationship between personality variables (extraversion and neuroticism) and sex and individual well-being.

8.1 Personality

DeNeve and Cooper (1998) conducted a meta-analysis to examine 137 personality constructs as correlates of SWB, which was conceptualised as encompassing trait-like measures happiness and life satisfaction, and state-like measures positive affect and negative affect. The authors focused on research among adults in English-speaking countries. The final sample included 148 studies containing data accumulated from 42,171 respondents to questionnaires. They reported an overall relationship between personality and SWB of $r = .19$. The individual conceptualisations rated as follows –

life satisfaction: $r = .20$ (143 independent samples), happiness: $r = .19$ (45 IS), positive affect: $r = .18$ (58 IS), and negative affect: $r = -.13$ (43 IS). With regard to the two aspects of personality used for control purposes in this study, extraversion and neuroticism, they reported findings suggesting that these traits were connected with SWB. Neuroticism was found to be the strongest predictor of negative affect ($r = .23$) and also life satisfaction ($r = -.24$), while happiness was found to be equally predicted by Extraversion ($r = .27$) and Neuroticism ($r = -.25$). The authors concluded that personality seems to influence how people perceive life events as they occur and also serves to bring people back to their usual levels of SWB in the wake of experienced events.

Hayes and Joseph (2003) looked at how the NEO Five Factor Inventory of personality correlated with three well-being measures – the Oxford Happiness Inventory (OHI), the Depression-Happiness Scale (DHS), and the SWLS - among an England-based community sample of 111 participants (36 male, 75, female, mean age: 37.77). Using regression analysis, the authors reported that higher scores on each of the SWB measures were associated with greater Extraversion (DHS: $r = .56$; OHI: $r = .68$, SWLS: $r = .42$), lower Neuroticism (DHS: $r = -.72$; OHI: $r = -.61$; SWLS: $r = -.54$), and higher Conscientiousness (DHS: $r = .43$; OHI: $r = .38$; SWLS: $r = .38$). They concluded that their analysis suggested those personality dimensions are related to well-being.

Cheng and Furnham (2003) examined the correlations and causes of happiness and depression among an England-based sample of adolescents. Two-hundred and thirty-four participants (75 male, 159 female, mean age: 18.23 years) completed a battery of

questionnaires, including the Eysenck Personality Questionnaire (Revised), the RSES, the Bradburn Affect Balance Scale, the Gurin Scale (a single-item measure of general happiness), the BDI, and the OHI. Using structured hierarchical multiple regressions, they found that extraversion correlated significantly with positive affect ($r = .27$, $p < .001$), negative affect ($r = -.02$, $p < .01$), and balanced affect ($r = .32$, $p < .001$), neuroticism was significantly correlated with positive affect ($r = -.24$, $p < .001$), negative affect ($r = .35$, $p < .001$), and balanced affect ($r = -.04$, $p < .001$), while extraversion and neuroticism were found to correlate inversely with happiness ($r = .45$, $p < .001$; $r = -.04$, $p < .001$), and Neuroticism and Extraversion were also inversely correlated with depression ($r = -.39$, $p < .001$; $r = .53$, $p < .001$). It should be noted that while some of the r values in this study were small, all presented here were significant.

Mak, Blewett, and Heaven (2004) examined the influence of neuroticism and extraversion on adolescent threat and challenge appraisals. The study involved 323 secondary school students in Australia – 120 males and 203 females, mean age: 16.4 years, age range: 12-18. Participants completed measures on neuroticism, extraversion, academic stress appraisals, and depressive symptoms. Reporting intercorrelations, they found that higher levels of depressive symptoms were significantly associated with being female ($r = .22$), neuroticism ($r = .62$), and threat appraisal ($r = .48$), and also with lower levels of extraversion ($r = -.23$) and challenge appraisal ($r = -.19$). A hierarchical regression analysis was also conducted. Sex was included as the first step, accounting for 4.8% of the variance in depressive symptoms. The second step saw neuroticism and extraversion added to the model, with this accounting for an additional significant 36% of the variance. The third step

saw threat and challenge appraisals added, and in the final model higher levels of neuroticism emerged as one of the significant predictors of depressive symptoms. The authors also reported that the effect of sex on depressive symptoms was neutralised when individual scores on neuroticism were taken into account.

Stafford, Ng, Moore, and Bard (2010) investigated the role of extraversion in positive mood and cognition. The study involved 86 England-based university undergraduates (17 males and 69 females, mean age: 20.74 years, age range: 18-53). Participants completed the Eysenck Personality Questionnaire Brief Version (EPQ-BV), scores were categorised into high or low extraversion groups, and then random assignment to either a positive or neutral mood condition took place. Participants were exposed to a music-based mood manipulation, and then attempted executive function, free recall, and creativity tasks, with mood rated before and after the manipulation using the PANAS. The researchers reported effects of time and extraversion on positive mood. At baseline, a significant effect of extraversion, $F(1, 84) = 5.14, p = .03$ showed higher positive mood in high ($M = 26.55, SE = .83$) as opposed to low ($M = 23.86, SE = .85$) extraverts. Also, greater increases in positive mood were reported for participants who had high extraversion ratings.

Gale, Booth, Mottus, Kuh, and Deary (2013) examined to what extent neuroticism and extraversion in adolescence can predict mental wellbeing and life satisfaction 40 years later. The authors sourced data collected during the conduct of the longitudinal MRC National Survey of Health and Development (NSHD; 1946 birth cohort) in Britain. The original sample included 5,362 participants, with 2,661 providing information at the most recent follow-up prior to the study. Participants completed

Eysenck's short Maudsley Personality Inventory (MPI) at age 16 and also at age 26, with this measure containing six items each on neuroticism and extraversion. When participants were aged 60-64, two well-being measures were added to the packet of questionnaires, one of which was the SWLS. In assessing the data, the authors created a structural model, initially without possible mediators, with a view towards assessing the magnitude of the main effects. They found that extraversion in youth had a significant positive main effect on life satisfaction when participants were in their 60s ($r = .16$, $p < .001$), while neuroticism had a significant negative main effect on life satisfaction ($r = -.18$, $p < .001$).

In conclusion, the literature strongly suggests a relationship between personality (specifically, for the purposes of this research, extraversion and neuroticism) and well-being.

8.2 Sex

It has been well-established in scientific literature that there are sex differences in depression during adolescence, with females more vulnerable to this mood disorder than males. Nolen-Hoeksema and Girgus (1994) note that in childhood there are negligible or no differences between males and females in depression rates, but by the mid-teens girls are approximately twice as likely to be depressed as boys.

Hankin et al. (1998) conducted a longitudinal study in the United States to investigate the development of depression from pre-adolescence into young adulthood. Structured diagnostic interviews were conducted on five occasions over a 10-year period, from age 11 to 21. They reported that sex differences began to emerge between age 13 and

15, with females more likely to become depressed. It was also noted that the most pronounced increase in the sex-based difference occurred in the 15-18 years group. This is of particular note to this research given that the initial survey and follow-up intervention phase were both conducted with samples drawn from Transition Year schools groups, in which the overwhelming majority of students tend to be aged 15-16 years.

Essau, Lewinsohn, Seeley, and Sasagawa (2010) examined sex differences in the developmental course of depression. The authors accessed data from a pre-existing longitudinal depression research project in the United States, and looked at sex differences in MDD over a 16-year period. At T1, there were 1,709 participants (818 males and 891 females), while the mean age was 16.6 years, with an age range of 14-19. At T4, 816 of the original participants were still involved (336 males and 480 females), all 30 years old. Participants underwent diagnostic interviews at each data gathering point. The authors reported that females had higher incidence rates of MDD and also a more chronic course.

Goldbeck, Schmitz, Besier, Herschbach, and Henrich (2007) looked at the effects of age and sex on life satisfaction among adolescents in Germany. This study involved 1,274 participants (52% males, mean age: 13.7 years, age range: 11-16), all of whom completed the Questions on Life Satisfaction FLZ instrument, a multi-dimensional measure of general life satisfaction and satisfaction with health. The results of the 2x6 ANOVASs conducted across all sex and age subgroups demonstrated significant main effects for age on general life satisfaction ($F(5, 1,257) = 14.8; p < .001$) and health-

related life satisfaction ($F(5, 1,254) = 8.0; p < .001$), while life satisfaction tended to decrease gradually in a linear fashion corresponding with age.

As detailed above, there is compelling evidence in the literature to the effect that sex can have a bearing on well-being related variables.

8.3 Summary

The purpose of this chapter was to focus on the control variables used in the initial survey. The literature highlights the influence that personality and sex can have on well-being-related variables, and therefore it is important to be aware of this and seek to make provision for those associations when analysing data accumulated during the conduct of the survey, particularly so given that the survey findings informed the process by which strategies were considered for the follow-up intervention phase.

9. SUMMARY OF LITERATURE AND PREDICTIONS ARISING

The literature presented in the first instance provided detail on aspects of adolescence. From there, the potential negative impact arising from depression among this age cohort was highlighted. Then, well-being was discussed against the backdrop of a positive psychology perspective, emphasising subjective happiness and life satisfaction. A range of relevant cognitive variables – including attributional style, optimism, self-efficacy, resilience, and self-esteem – were then considered, as well as mindfulness and gratitude, examining how the literature indicates each of these impacts on well-being among adolescents. Finally, the respective roles of sex and personality in influencing adolescent well-being were also considered.

Arising from this examination of relevant theory and research, the current study was composed of an initial survey into, and a follow-up series of interventions designed to enhance, adolescent well-being. The initial survey was conducted with a view towards assessing the influence of all variables examined in the literature in determining levels of well-being among a sample of school-based adolescents in Cork city and county, Republic of Ireland. Well-being was operationalised as higher levels of subjective happiness and life satisfaction, and lower levels of depressive symptoms, with questionnaires assessing these three variables acting as the DVs in the survey. IVs measured with a view towards assessing their respective ability to predict overall well-being included those mentioned above, i.e., the five cognitive variables (attributional style, optimism, self-efficacy, resilience, and self-esteem), mindfulness, and gratitude, while personality (extraversion and neuroticism) and sex were also assessed for control purposes.

It was predicted that, when controlling for sex and personality, higher scores in dispositional optimism, self-efficacy, resilience, self-esteem, mindfulness, and gratitude, and lower scores in attributional style (with lower scores in the questionnaire used indicating more well-adjusted tendencies in ascribing causes to events) would be associated with higher self-reported ratings in well-being.

If these predictions proved to be borne out in the analysis of data collected during the conduct of the survey, then this would suggest that interventions centred on cognitive-behavioural techniques, as well as gratitude and mindfulness may prove effective in enhancing well-being among school-going adolescents.

10. METHODOLOGY (STUDY 1: PRELIMINARY SURVEY)

10.1 Cross-Sectional Survey

The methodology employed in the initial study undertaken as part of this research was a *cross-sectional survey*, conducted through the use of a questionnaire containing multiple pre-existing psychometric scales.

Robson (2002) states that it is difficult to offer a concise definition of what constitutes a survey, given the wide range of studies that have been so described. Instead, he highlights three key features typically found in a survey: a quantitative design, collecting a small amount of data in standardised form from relatively large numbers, and selecting representative samples of individuals from target populations. Cozby (2004) offers a succinct description of survey-based research, indicating that it involves the use of questionnaires or interviews, with a view towards eliciting information from individuals about themselves. Bryman (1989) offers a similar definition, but adds that when practicalities allow survey data will be collected at a single time juncture, will tend to involve a number of variables, and also that data accrued in this manner will be analysed with a view towards identifying patterns of association. There are differing positions on the philosophical underpinnings of survey-style research, with Neuman (2007) stating that it emerged from positivism, while Sturgis (2007) expresses the view that this type of research is not tied to any specific philosophical perspective. However, both acknowledge that survey-style research can involve a hypothetico-deductive approach (starting with a theoretical position or research problem and eventually proceeding to the gathering of empirical data, the subsequent analysis of that data, and the testing of hypotheses in line with

the scientific method). This adherence to the tenets of the scientific method is also seen in that the survey approach holds that knowledge emerges from empirical data derived from observable events, that there are associations between variables through which the levels of some will determine those of others, and that the process of research can lead to the identification of these relationships, with this then facilitating explanations and/or predictions relating to particular phenomena of interest.

Robson (2002) details a number of advantages and disadvantages associated with the use of questionnaire-based surveys. Among the possible disadvantages are data being affected by the characteristics of participants (e.g., memory, motivation, and personality), participants may exhibit a social desirability response bias when completing scales (e.g., responding in a way that they think shows them in a good light, as opposed to reporting accurately on their beliefs and attitudes), researchers may not be able to identify instances when survey questions have been misunderstood, and researchers may also not be able to detect when participants do not take the research seriously. However, as indicated, Robson also points to a number of advantages associated with surveys, including that they offer a relatively straightforward approach to studying attitudes, beliefs, motives, and values, they can be adapted to gather generalisable information from the vast majority of human populations, there are high amounts of data standardisation, it can be the best way to source information on the past history of large numbers of people, they can be highly efficient in providing large amounts of data at a relatively low cost over short time periods, and they also allow anonymity, which can encourage openness and honesty among participants, particularly when researching sensitive areas.

The cross-sectional design is regarded as being the most straightforward type of survey, in that it involves sourcing participants and acquiring data on only one occasion (Fife-Schaw, 2000). Therefore, a cross-sectional survey offers a snapshot of how a given population rates on variables of interest at one moment in time. The participant sample is regarded as being a cross-section of the target population (in the case of this research, adolescent males and females), thus making it possible to compare different groups based on scale scores, while controlling for the effects of other variables (in this research, control variables are personality and sex). However, the snapshot nature of the cross-sectional design legislates against the inference of causal relationships. Looking at the advantages of this approach, Fife-Schaw points to relatively low financial costs, high response rates, and also the potential for quick turnaround in terms of analysing results. He singles out time of measurement effects as the major disadvantage of cross-sectional surveys. He describes these as “influences on responses that are due to immediate historical events” (p. 89).

Elaborating further, he suggests that attitudes towards public transport could be skewed to a dramatic extent if gathering data on the same day as a major rail crash, while he also points to how media attention can influence how people feel about given topics, but it is very difficult for a researcher to know which participants have been exposed to such information on the day or leading up to the conduct of the survey.

A classroom-based cross-sectional survey was judged to be the most appropriate methodology for this study. As all participants are of school-going age, it was decided that seeking to recruit through schools and conducting the survey in that environment offered the best opportunity to maximise participation, with consent issues surrounding minors also a factor in these considerations. Choosing a survey was also

justifiable given that many of the variables being assessed were pre-existing and not amenable to experimental manipulation. Given that this study seeks to assess pre-existing levels of variables, it can accurately be described as ex post facto research (Cohen, Manion, & Morrison, 2011). As well as this, the variables targeted in this study did not lend themselves to assessment by direct observation, therefore it was necessary to seek self-reports from participants. A further reason for choosing a cross-sectional design in this study was that the purpose of the investigation was not to assess change over time. In this part of the research, the main purpose was to get a snapshot of current levels of the relevant variables, investigating the relationships between them, and assessing to what extent the IVs influence well-being, as measured by the DVs.

10.2 Variables

There were a number of variables assessed in this study. All are listed below, and the manner in which they were operationalised will be described in Section 11.2.

DVs included subjective happiness, life satisfaction, and depressive symptoms. For the purposes of this study, well-being was operationalised as scores reported by participants on these three measures.

IVs included: attributional style, gratitude, optimism, self-efficacy, resilience, self-esteem, mindfulness, and personality (extraversion and neuroticism). Personality and sex were also used for control purposes.

10.3 Sampling

The sampling technique used in this study was *simple random sampling*. The purpose was to create a situation in which all individuals in the sampling frame have an equal chance of taking part in the survey (Fife-Schaw, 2000). Transition Year (TY) students in participating schools were briefed on the purpose of the research, presented with information sheets, and also consent forms, both for themselves and a parent/guardian to read and sign. All students who returned both signed consent forms were recruited as participants. Fife-Schaw notes that an advantage of sampling strategies of this sort is that data subsequently gathered can be analysed using all conventional statistical techniques. He adds that a potential disadvantage to such approaches is that they can prove cumbersome when looking to sample from a large population, e.g., an entire country. However, in this study, each sample population was made up of relatively small TY groups in the participating schools.

11. METHOD (STUDY 1: PRELIMINARY SURVEY)

The method section will be divided into five main subsections. The first of these will describe the relevant characteristics of the study participants. The second subsection will provide information on the psychometric scales used in this study, including validities, reliabilities, and internal consistencies. The psychometric scales used include the Subjective Happiness Scale (SHS), Center for Epidemiologic Studies Depression Scale for Children (CES-DC), Satisfaction With Life Scale (SWLS), Adolescent Cognitive Style Questionnaire (ACSQ), Gratitude Questionnaire-Six Item Form (GQ-6), Life Orientation Test-Revised (LOT-R), General Self-Efficacy Scale (GSE), Resilience Scale (RS-14), Rosenberg Self-Esteem Scale (RSES), Mindfulness Attention Awareness Scale (MAAS), and Eysenck Personality Questionnaire Brief Version (EPQ-BV). The third subsection will detail what other materials were used in the conduct of this study. The fourth will outline the procedure through which the data were collected, while the fifth will discuss the statistical analyses applied to the data post-collection.

11.1 Participants

The final dataset included 327 participants – 131 (40.1%) males and 196 (59.9%) females. Three hundred and seventy-six individual surveys were collected, but 49 were deemed unsuitable for analysis and excluded from the final sample, due to large amounts of missing data. The modal age range among the sample was 14-17. The overwhelming majority of participants were either 15 or 16, with a mean age of 15.42 years. The sample was drawn from TY students in 13 secondary schools based in Cork city and county.

Participants were recruited through schools. In the first instance, 88 secondary schools in Cork city and county were approached through written letters outlining the nature of the research and requesting that they become involved in the survey. School principals/TY co-ordinators who did not respond to the letter were subsequently contacted via email and then, in the event of this not eliciting a response, remaining schools were contacted by telephone. With the 13 schools that expressed an interest in facilitating the survey, information sessions were arranged during which the broad focus of the research was explained to class members and consent forms – both for potential participants and their parents/guardians - were distributed. Students who subsequently returned both signed consent forms to the school were deemed to be survey participants.

11.2 Psychometric Scales

The survey was composed of 11 questionnaires. Each questionnaire was chosen based on its suitability for an adolescent sample, while the length of each questionnaire was also taken into consideration. An effort was made to ensure that questionnaires were made up of as few items as possible, with a view towards ensuring that the survey could be completed within a relatively short timeframe (i.e., 40-50 minutes), with this deemed likely to make scheduling more feasible for schools, while also encouraging completion by participants.

Subjective Happiness: Subjective happiness was measured using the Subjective Happiness Scale (SHS; Lyubomirsky & Lepper, 1999). The authors state that the measure attempts to capture both the affective and cognitive elements of subjective happiness. This scale consists of four items, the last of which is reverse scored. Each

item asks participants to respond to a statement by circling the appropriate number on a seven-point Likert scale. For example, the first item states “In general, I consider myself:”; participants see the seven-point answer range - in which 1 indicates “not a very happy person” and 7 corresponds to “a very happy person” - and circle whichever number they feel most appropriately describes them. Scores are assessed by summing the four responses and/or calculating a mean. The possible range of scores extends from 1.0 to 7.0 when averaged, or 7 to 28 summed, with higher scores deemed to reflect higher levels of subjective happiness. Lyubomirsky and Lepper (1999) reported good to excellent reliability, with Cronbach’s alpha scores ranging from .79 to .94 ($M = .86$), while good construct validity was also found, with the SHS correlating from .52 to .72 with other measures, including the Affect-Balance Scale, Delighted-Terrible Scale, Global Happiness Item, Recent Happiness Item, and Satisfaction With Life Scale. While college students and community adults made up the vast majority of the population sample, adolescents from one US high school were also included.

The SHS has been found to be valid and reliable when used in research outside the United States. Vera-Villarroel, Celis-Atenas, and Cordova-Rubio (2011) conducted studies designed to evaluate the psychometric properties of the SHS when used in a Chilean population sample. They conducted two studies – both of which included adolescent participants – and reported an alpha score of .78, while the reliability estimation was between .73 and .87.

Swami (2008) reported on the translation and validation of the SHS in Malaysia. Reliability and validity was investigated among a community sample of 517 adult

participants in Kuala Lumpur. A rigorous process of translation and back-translation was undertaken with a view towards ensuring comparability and meaning equivalence. On scale reliability, the author found an internal consistency coefficient of .93, which, he noted, was consistent with Cronbach's alpha scores reported by Lyubomirsky and Lepper (1999). Convergent validity was assessed by comparing the SHS with two single-item measures, the Delighted-Terrible Scale and the Global Happiness Item. Swami reported positive correlations between the SHS and the other two measures, .51 and .49 respectively, and concluded that the SHS showed good convergent validity.

The current study obtained a Cronbach's alpha score of .78.

Depression: Symptoms of depression were measured using the Center for Epidemiologic Studies Depression Scale for Children (CES-DC; Weissman, Orvaschel, & Padian, 1980). This is a 20-item measure, which was derived from the Center for Epidemiologic Studies Depression Scale (CES-D; Radloff, 1977), with the main changes being to rephrase items to make them more suitable for adolescents. The CES-DC uses a four-point Likert answering scheme, where 0 indicates "not at all" and 3 corresponds to "a lot". Four items are negatively worded, and therefore reverse-scored. Participants respond to 20 statements, e.g., "I was bothered by things that don't usually bother me". Scores range from 0 to 60, with higher scores taken to indicate higher levels of symptoms consistent with depression. The recommended cut-off point is 15, with scores above this level suggestive of significant levels of depressive symptoms.

Weissman et al. (1980) found that young people's scores on the CES-DC correlated well with other depression scales, including the Children's Depression Inventory (CDI), $r = .44$ ($p < .05$) and the Social Adjustment Scale Self-Report (SAS-SR), $r = .75$ ($p < .001$). An assessment of the scale reliability by Faulstich, Carey, Ruggiero, Enyart, and Gresham (1986) reported a coefficient alpha of .84. The same research found test-retest reliability after a two-week interval of $r = .51$ ($p < .005$), and a correlation coefficient of .44 between CES-DC totals and those of the CDI. Subsequent international studies have supported the validity and reliability of the CES-DC as a screening tool to assess the degree to which adolescents appear vulnerable to depressive symptoms. The instrument has been successfully adapted for non-English speaking countries, including China (e.g., H.C.W. Li, Chung, & Ho, 2010), Germany (e.g., Barkmann et al., 2008), and Rwanda (e.g., Betancourt et al., 2012).

The Cronbach's alpha in this study was .89.

Life Satisfaction: Life satisfaction was assessed using the Satisfaction With Life Scale (SWLS; Diener, Emmons, et al., 1985). This is a five-item instrument designed to measure global cognitive judgements of an individual's satisfaction with their own life. This measure operates a seven-point Likert scale answering scheme, where 1 corresponds to "strongly disagree" and 7 indicates "strongly agree". Items are phrased as statements and participants are asked to indicate their level of agreement with each, e.g., "In most ways my life is close to my ideal". The range of possible total scores extends from 7 to 35, with higher scores taken to suggest higher levels of life satisfaction.

Initial and subsequent studies have examined the internal consistency of the SWLS, and the alpha coefficients found have repeatedly exceeded .80 (e.g., Pavot & Diener, 1993). Also, the original study undertaken by Diener et al. reported an alpha coefficient of .87. The original validation studies correlated the SWLS with several other measures of SWB, with most correlations reported as .50 or higher for each of the two samples from the original work. Neto (1993) undertook to assess the psychometric properties of the scale in an exclusively adolescent population. This research, undertaken with a Portuguese sample, reported positive findings. The internal consistency coefficient was .78. Evidence was also found to support the validity of the scale when working with adolescents. Overall current happiness (assessed through a single-item measure, in which participants self-rated their happiness on a seven-point scale) was found to correlate significantly with life satisfaction for male adolescents ($r = .71$), female adolescents ($r = .66$), and teenagers from families deemed to be of middle/high sociocultural level ($r = .71$).

The Cronbach's alpha in this study was .86.

Attributional Style: Attributional style was measured using the Adolescent Cognitive Style Questionnaire (ACSQ; Hankin & Abramson, 2002). This self-report instrument seeks to measure internal/external, stable/unstable, and global/specific attributions relating to the causes of 12 hypothetical, negative-leaning scenarios which participants could expect to encounter during the course of daily life. In the original measure, six of these scenarios are set in the academic environment, while six are positioned in a social setting. Each scenario begins with a statement (e.g., "You take a test and get a bad grade") with participants then asked to write a brief response

indicating why they believe the event occurred, and they are then presented with three follow-up questions designed to measure attributions on the three dimensions mentioned. These follow-up questions ask whether the participant believes the negative event (e.g., the bad grade) occurred due to themselves or because of something else (internal/external), whether that reason is likely to cause similar problems in the future (stable/unstable), and if the reason is likely to cause problems in other parts of life (global/specific). Participants answer the questions on a seven-point Likert scale, where 1 corresponds to “totally caused by something else” and 7 indicates “caused by something about me”. In this research, the qualitative element (i.e., the written responses) is not analysed, with the focus here exclusively on the quantitative data accumulated from the responses assessing the three attributional tendencies.

For this research, a shortened version of the ACSQ was used. The full ACSQ claims a three-factor structure (Hankin & Abramson, 2002). As well as assessing negative inferences for causes (i.e., internal/external, stable/unstable, and global/specific), it also uses questions designed to measure negative inferences on possible future consequences of each hypothetical event and negative inferences relating to the self, arising from the event. It was decided to exclude these two sub-scales from this research because those factors were being measured by other questionnaires in the survey. Focusing on future consequences relates to optimism, which was measured using the Life Orientation Test-Revised, while negative inferences on the self are related to self-efficacy and self-esteem, both of which were measured using dedicated questionnaires. Also, as specified earlier, given the volume of questionnaires contained in the survey, a conscious effort was made to minimise the overall number

of items, with a view towards encouraging completion. In a multi-wave longitudinal study on the development of depressive attributional style, Cole et al. (2008) also reported using the ACSQ, but focused exclusively on the causes sub-scale, i.e., not using the sub-scales on consequences and the self. While not explicitly stating why they excluded the other two sub-scales, Cole et al. made a point of stating that researchers “typically combine information about internality, stability, and globality to form a composite AS score” (p. 17), whereas Hankin and Abramson (2002) emphasise that that they designed the full ACSQ with sub-scales on future consequences and implications for the self against the backdrop of the hopelessness theory of depression.

In this study, 5 of the 12 hypothetical statements were removed, either because they were not suitable for the specific age group being dealt with (e.g., “You don’t get accepted by any colleges”) or they didn’t translate from American culture to an Irish adolescent setting (e.g., “You didn’t make the honor role, but you wanted to”). Cole et al. (2008) also reported removing four of the 12 items on age-related grounds, but as that research was conducted in the United States, they did not need to consider removing the item referring to ‘the honor role’.

In research conducted among an adolescent population by Hankin and Abramson (2002), the ACSQ was found to have high levels of internal consistency ($\alpha = .81$ to $\alpha = .93$) and test-retest reliability ($r = .51$, $r = .73$). With regard to the attributional style sub-scale, the authors state that, in line with the hopelessness theory of depression, they conceptualised cognitive vulnerability as a negative cognitive style in which individuals tend to make negative inferences relating to global and stable causes, with

the internal dimension de-emphasised. Therefore, they recommend calculating separate alphas for what they call the generality sub-scale (stable/unstable and global/specific) and the internality dimension. They reported alpha scores of .91 and .81 respectively.

Construct validity was assessed by testing whether the three attributional tendencies interacted with negative events to predict depressive and internalising symptoms, but not externalising-type behaviours (e.g., delinquency, physical aggression), and also by examining whether the questionnaire was associated with a pre-existing attributional style measure – the Children’s Attributional Style Questionnaire – Revised (CASQ-R). The authors reported correlations supporting the construct validity of the ACSQ. The causes sub-scale used in that research was found to correlate strongly with the anxiety/depression syndrome sub-scale of the Youth Self-Report (YSR) ($r = .50$), while medium correlations were reported with the CASQ-R ($r = .39$), the Adolescent Life Events Questionnaire ($r = .33$), the Beck Depression Inventory ($r = .33$), and the externalising dimension from the YSR ($R = .25$).

The findings on the psychometric properties of the ACSQ reported by Hankin and Abramson (2002) were subsequently supported in a Spanish adaptation of the measure (Calvete, Villardon, Estevez, & Espina, 2007). Also, Cole et al. (2008) compared the 8-item version of the ACSQ using the attribution sub-scale with the Children’s Attributional Style Interview and reported correlations of .40 on internality/externality, .41 for stable/unstable, and .56 for global/specific.

The Cronbach's alpha in this study for the internal/external dimension of attributing causes to events was .59, while the alpha value for the stable/unstable and general/specific items was .87. The alpha value for the attribution sub-scale of the ACSQ as a whole was .86.

Gratitude: Gratitude was measured using the Gratitude Questionnaire-Six Item Form (GQ-6; McCullough, Emmons & Tsang, 2002). This is a six-item measure, which operates a seven-point Likert scale answering scheme, where 1 indicates "strongly disagree" and 7 corresponds to "strongly agree". Each item is phrased as a statement, e.g., "I have so much in life to be thankful for". Two of the six items are negatively phrased, and therefore reverse-scored. Total scores can range from 6 to 42, with higher scores indicating higher levels of self-reported gratitude.

McCullough et al. (2002) reported a Cronbach's alpha value of .82 for the six-item measure. The initial study also found that the GQ-6 correlated positively with related measures, such as life satisfaction ($r = .53$), optimism ($r = .51$), subjective happiness ($r = .50$), and positive affect ($r = .31$), and negatively with negative affect ($r = -.31$), depression ($r = -.30$), and anxiety ($r = -.20$). Froh, Emmons, Bono, Huebner, and Watkins (2011) assessed the psychometric properties of the GQ-6 among a population of children and adolescents. Participants were broken up into six different age brackets for the analysis – 10-11, 12-13, 14, 15, 16, and 17-19 years. As the overwhelming majority of participants in the current study were aged 15-16 years, alpha values and correlations will only be presented for those groups. Froh et al. reported Cronbach's alpha scores of .84 and .81 for the GQ-6 with 15- and 16-year-olds respectively. Among the same age groups, the authors reported statistically

significant correlations between the GQ-6 and the Gratitude Adjective Checklist ($r = .47$ and $.52$ respectively) and also the Gratitude, Resentment, Appreciation Test-Short Form ($r = .63$ and $.70$ respectively).

The Cronbach's alpha in this study was $.69$.

Optimism: The Life Orientation Test-Revised (LOT-R; Scheier, Carver, & Bridges, 1994) was used to measure dispositional optimism. This questionnaire is a revised version of the original LOT. It contains 10 items, but four of these are filler, meaning that only six items are considered when calculating scores. Three items are positively worded; for example, "I'm always optimistic about my future". Participants are also asked to respond to three negatively worded items; for example, "I rarely count on good things happening to me". Participants indicate their level of agreement with each of the six statements using a five-point Likert scale, with the range stretching from 0, indicating "strongly disagree", to 4, denoting "strongly agree". The negatively worded items are reversed for scoring purposes. Total scores can range from 0 to 24, with higher scores suggesting higher levels of dispositional optimism.

Scheier et al. (1994) reported a Cronbach's alpha score of $.78$ when dealing with an undergraduate sample. Test-retest reliabilities were reported as $.68$ (four months), $.60$ (12 months), $.56$ (24 months), and $.79$ (28 months). These findings were taken to indicate that the measure exhibits an acceptable level of internal consistency, and that it is fairly stable across time. With regard to validity, the authors reported a strong correlation between the LOT-R and the original LOT ($r = .95$) and what they termed as relatively modest correlations with several related scales, including the Rosenberg

Self-Esteem Scale ($r = .50$), the Self-Mastery Scale ($r = .48$), the trait version of the State-Trait Anxiety Inventory ($r = -.53$), neuroticism as assessed by the Guildford-Zimmerman Temperament Survey ($r = -.43$), and neuroticism as assessed by items from the Eysenck Personality Questionnaire ($r = -.36$).

Durakovic-Belko, Kulenovic, and Dapic (2003) utilised the LOT-R in research with adolescents from Sarajevo who had been exposed to traumas during the war in Bosnia and Herzegovina. They reported a Cronbach's alpha score of .61. Creed, Patton, and Bartrum (2002) used the LOT-R in research with more than 500 Australian high school students, investigating the relationship between optimism, career maturity, and well-being. They reported a Cronbach's alpha of .60. Also, Creed et al. tested the relationship between the LOT-R and two well-being variables – self-esteem (RSES) and psychological well-being (12-item General Health Questionnaire), reporting correlations of .55 and -.38 respectively, with the negative direction of the correlation between the LOT-R and the GHQ-12 due to the point that higher scores in the latter measure indicate greater psychological distress.

The Cronbach's alpha in this study was .80.

Self-Efficacy: Self-efficacy was measured using the General Self-Efficacy Scale (GSE). The scale was initially developed in German, and subsequently translated into more than 30 languages, including English (Schwarzer & Jerusalem, 1995). This is a 10-item measure, and responses are made on a four-point Likert scale, where 1 indicates “not at all” and 4 corresponds to “exactly true”. Participants respond to a series of statements designed to assess the extent to which they exhibit optimistic self-

belief and an ability to cope with adversity, e.g., “I can always manage to solve difficult problems if I try hard enough”. Scores range from 10 to 40, with higher scores deemed indicative of higher levels of self-efficacy. Scholz, Gutierrez Dona, Sud, and Schwarzer (2002) reviewed psychometric findings among 19,120 participants from 25 countries using adaptations of this scale and highlighted that country-by-country Cronbach’s alpha scores ranged from .75 to .91, and also highlighted validity work conducted by the authors in Germany which showed that among a sample of adolescents the GSE correlated to medium levels with optimism ($r = .49$) and perception of challenge in difficult situations ($r = .45$).

Schwarzer, Mueller, and Greenglass (1999) examined the psychometric properties of the GSE when completed over the internet as opposed to a paper-and-pencil setting. This research involved 1,437 participants in Canada and Germany, with approximately 25% aged 15-20 years. They reported an overall internal consistency value of .87. With regard to validity, they reported a medium negative correlation with test anxiety ($r = -.40$), a small negative correlation with introversion ($r = -.16$) and small positive correlations with grade point average ($r = .19$) and income ($r = .18$).

Luszczynska, Scholz, and Schwarzer (2005) examined the relationship between general self-efficacy and a range of social cognitive variables. The large three-country study (Germany, Poland, and South Korea) involved 1,933 participants, including adolescents and adults. Cronbach's alpha values ranged from .86 to .94. On validity, the authors reported small to medium correlations between the GSE and several well-being-related variables, e.g., depressive symptoms ($r = -.36$), quality of life –

emotional functioning ($r = .32$), quality of life – cognitive functioning ($r = .22$), and global quality of life ($r = .24$).

Leganger, Kraft, and Roysamb (2000) conducted two studies designed to examine the psychometric properties and socio-demographic correlates of the GSE in a Norwegian population, with participants including adolescents and adults. Results suggested that the factor structure, internal consistency, and test-retest reliability of the instrument were satisfactory. In the first study, internal consistency of the GSE was found to be .82. The second study produced a Cronbach's alpha value of .88, while test-retest reliability seven weeks later was .82. Reporting their findings on construct validity, the authors noted positive correlations between the GSE and positive affect ($r = .40$), internal locus of control ($r = .23$), life satisfaction ($r = .26$), and sensation seeking ($r = .23$), while a negative correlation was found with negative affect ($r = -.21$).

The Cronbach's alpha in this study was .84.

Resilience: Resilience was measured using the 14-item Resilience Scale (RS-14; Wagnild, 2009). This is a shortened version of an already existing 25-item measure. Participants are asked to respond to statements designed to assess individual resilience, e.g., "I usually take things in my stride". Answers are provided on a seven-point Likert scale, where 1 indicates "strongly disagree" and 7 denotes "strongly agree". All items are positively worded, so no score reversals are required. Total scores range from 14 to 98, with higher scores indicating higher levels of resilience.

The shorter version of the scale was developed partly with a view towards meeting a perceived need for brevity, and included items that reflected the five characteristics of resilience identified in the 25-item measure – self-reliance, meaning, equanimity, perseverance, and existential aloneness. The two versions of the measure were found to be strongly correlated ($r = .97$, $p < .001$), while the RS-14 was found to have a coefficient alpha of .93, indicating good reliability.

Both the original RS and the shorter RS-14 have been adapted for use internationally. The existing literature reports that the validity and reliability of the scale has held up when subjected to analysis outside the United States. Damasio, Borsa, and da Silva (2011) examined the psychometric properties of the RS-14 in adapting it for use with participants in Brazil. This research was conducted among 1,139 participants, aged 14 to 59 years. Cronbach's alpha scores ranging from .73 to .83 were reported by the researchers, suggesting good reliability. Positive correlations were also reported when running Pearson's correlations with meaning in life ($r = .55$), depression ($r = -.47$), and self-efficacy ($r = .46$) measures, suggesting acceptable convergent validity.

The Cronbach's alpha in this study was .90.

Self-Esteem: The Rosenberg Self-Esteem Scale (RSES; Rosenberg, 1965) was used to measure self-esteem. As well as self-esteem, this measure also assesses levels of self-worth, self-respect, and ability. It is made up of 10 items, five of which are reverse-scored. Participants read 10 statements, and indicate whether they strongly agree, agree, disagree, or strongly disagree with the sentiment expressed (e.g., “At times, I think I am no good at all”). Each item is rated on a four-point Likert scale, from 0 to

3. Totals can range from 0 to 30, with higher scores indicative of higher levels of self-esteem.

The scale was developed in research undertaken with 5,024 High School students in the United States. The original study reported internal consistency of .77, while the minimum coefficient of reproducibility was at least .90. Subsequent research has confirmed the reliability and also supported the validity of the measure (e.g., Bagley, Bolitho & Bertrand, 1997; Sinclair et al., 2010). In research undertaken with a Canadian high school population, Bagley et al. reported alpha values ranging from .85 to .90. Sinclair et al. conducted research across demographic groups in the United States, specifically to examine the psychometric properties of the RSES among a variety of ages and ethnicities. When analysing convergent validity of the scale, the researchers found broad support for the recommendation that items should reach an $r = .40$ Pearson product-moment correlation. The only exception was RSES05 in the US\$100,000 or greater income sub-group, with a value of $r = .39$ reported. Also, all groups reported Cronbach's alpha values of more than .70.

The Cronbach's alpha score in this study was .90.

Mindfulness: Participants were asked to complete the Mindfulness Attention Awareness Scale (MAAS; K.W. Brown & Ryan, 2003). It is made up of 15 items, but for the purposes of this study, one item relating to driving was removed. This was done because the vast majority of the sample population was under 17, and therefore not legally permitted to drive. This revision was in line with that undertaken by K.W. Brown, West, Loverich, and Biegel (2011) when adapting and validating the MAAS

for an adolescent population, with the 14-item version of the measure formally called the Mindfulness Attention Awareness Scale – Adolescent (MAAS-A).

Both the MAAS and MAAS-A assess individual tendencies to be attentive to and aware of present-moment experience in daily life. The MAAS is made up of a series of statements (e.g., “I could be experiencing some emotion and not be conscious of it until some time later”), which participants respond to using a six-point Likert scale, in which 1 indicates “almost always” and 6 denotes “almost never”. Total scores range from 15 to 90 (14 to 84 in this study), with higher scores indicative of greater mindfulness. K.W. Brown and Ryan (2003) reported alpha values ranging from .82 to .87. With regard to validity, the authors stated that the MAAS was related to other indicators of well-being in the expected directions. They reported positive correlations with emotional-subjective well-being variables, including pleasant affect (ranging from $r = .16$ to $.40$), positive affect ($r = .30$ to $.39$), and life satisfaction ($r = .26$ to $.37$), while negative correlations were found with unpleasant affect ($r = -.33$ to $-.42$) and negative affect ($r = -.39$ to $-.43$). Correlations with emotional disturbance variables showed a negative relationship with depression as measured by the CES-D ($r = -.37$) and the BDI ($r = -.41$ to $-.42$). Subsequent research by MacKillop and Anderson (2007) used confirmatory factor analysis in generating findings which supported the unidimensional factor structure of the MAAS.

K.W. Brown et al. (2011) reported the internal consistency of the adapted measure as being .85 (Time 1) and .88 (Time 2). They also found that the MAAS-A was positively related to healthy self-regulation ($r = .39$), life satisfaction ($r = .34$), wellness ($r = .30$), happiness ($r = .23$), and positive affect ($r = .22$). With personality

variables, it was moderately related to lower neuroticism ($r = -.42$), positively related to agreeableness ($r = .23$) and conscientiousness ($r = .23$), while the relationship with openness to experience was weaker ($r = .09$) and the measure was not related to extraversion ($r = .08$). The authors stressed that the correlations they found closely paralleled those reported by K.W. Brown and Ryan (2003) when working with adult participants.

Black, Sussman, Anderson Johnson, and Milam (2012) undertook an assessment of the measure's psychometric properties among a Chinese adolescent population. Test-retest reliability correlations were all reported as being of medium-to-large magnitude and statistically significant, both for the 15-item MAAS and a shorter six-item version of the scale. Convergent validity was also deemed to be acceptable.

The Cronbach's alpha score in this study was .85.

Personality: The Eysenck Personality Questionnaire Brief Version (EPQ-BV; Sato, 2005) was used to measure personality in this study. This measure is derived from the 48-item Eysenck Personality Questionnaire Revised short-form (EPQ-S), and is composed of 24 items, half of which measure extraversion, with the remaining items measuring neuroticism, while two items are negatively phrased and therefore reverse-scored. Participants answer a series of questions which are rated on a five-point Likert scale, where 1 denotes "not at all" and 5 corresponds to "extremely". Scores are generated for both extraversion and neuroticism, with the respective totals ranging from 12 to 60. Sato reported good internal consistency, test-retest reliability, and concurrent validity. His research reported Cronbach's alpha values of .92 for the

extraversion scale and .90 for the neuroticism scale. He also found that the validity of the brief version matched up well when correlated with the original measures, with values of .88 and .89 found.

In this study, the Cronbach's alpha score for the 12 items assessing extraversion was .90, while the corresponding score for neuroticism was .88.

11.3 Other Materials

In addition to the instruments described above, other materials were also used, including:

- A cover sheet to the survey which requested demographic information from participants, including a four-digit unique identifier (to preserve anonymity but identify each participant for statistical analysis purposes), age, sex, and race/ethnicity (with the response options provided here in line with those offered in the most recent Census in Ireland).
- A letter was sent in the first instance to all secondary schools in Cork city and county outlining the nature of the research and requesting that they participate in the survey. Individually addressed letters were sent to the principal and Transition Year co-ordinator in each school. (see Appendix 1)
- During the information session held in each participating school, consent and information forms were distributed to students, both for themselves and also a parent/guardian, as all students were under 18 years of age. (see Appendix 2-5)

11.4 Procedure

A pilot study was conducted to assess the viability of the survey as constituted. One of the main concerns was to estimate how long completing a packet of 11 questionnaires would be likely to take, with a view towards ensuring that the task would not be unreasonably demanding for participants, either in terms of time or concentration, and also that school authorities would be able to accommodate it in the timetable. Four individuals, all female, took part in the pilot study. All were PhD candidates at the School of Applied Psychology at University College Cork. While this sample was not representative of the survey's target audience, from the perspective of ethics it was deemed more feasible to work with this group than to seek a group of TY students from non-participating schools or other adolescents under the age of consent. While it was understood that PhD students would be more familiar with the questionnaire format than most people of TY age, it was felt that the pilot study would provide an insight into whether the survey would need to be revised for schools. Concerns over the time the survey would take were eased during the pilot process. Participants completed the survey in 20-25 minutes, which suggested that – even allowing for familiarity with the format – the necessary time commitment would not prove too much either for schools to accommodate or TY students to undertake, while other suggestions about matters relating to clarity and presentation were taken on board and addressed.

As previously stated, all second level schools throughout Cork city and county were approached with a view towards becoming involved in this research; ultimately, 13 schools agreed to offer the survey to their TY groups. Two visits were conducted with each participating school. The first visit functioned primarily as an information

session, in which the nature of the research being conducted was explained, and students were given a sense of what would be expected of them. In this case, that meant telling them they would be asked to complete a survey made up of 11 questionnaires looking at the overall issue of adolescent well-being. At the conclusion of the information session, consent forms were handed out, both for the students and parents/guardians.

When consent forms were returned to the schools by those class members who were interested and had been given permission by a parent/guardian to participate, a time was scheduled with each school for the survey to be conducted. Two class periods were assigned to the survey in each school. Pre-survey briefings and distribution of scripts took 10-15 minutes. The entire group was retained on each occasion until all participants were finished, after which a post-survey briefing was given, in which all present were reminded that they could withdraw their consent within two weeks, and any questions were answered. Group sizes varied from 11 to more than 50, with the time it took each group to complete the survey ranging from 45 to 55 minutes. The full contents of the survey document are presented here in Appendix 6.

11.5 Statistical Analyses

In the first instance, data was cleaned in preparation for the generation of descriptive statistics. This meant running a protocol for missing CES-DC data to compensate for unanswered questions. The creators of the measure recommend the use of the formula: $\text{compute CESDC}=\text{rnd}(20*(\text{mean.16}(\text{CESDC01 to CESDC20})))$ in the event that no more than four of the 20 items are left unanswered.

11.5.1 Descriptive

The analysis of the data commenced with the application of descriptive statistical techniques. This yielded medians and mean scores, as well as standard deviations for each continuous variable (e.g., life satisfaction), while also offering percentages for categorical variables (e.g., sex).

11.5.2 Bivariate

Following the calculation of descriptive scores, bivariate inferential statistics were applied. As all of the independent variables were continuous, correlations were employed. Calculating the correlation between two variables offers a standardised measure of the level of covariance between those two variables. Conducting the descriptive statistics analysis in the first instance allowed a decision to be made as to whether the data were normally distributed, with this information informing the choice between parametric or non-parametric equations (Field, 2005).

As the three DVs were found to be not normally distributed, non-parametric techniques were used when examining correlations between those variables and the IVs. The Spearman's Rank Order Correlation technique was used for this purpose. This test works by initially ranking the relevant data, and then applying Pearson's equation (a parametric calculation) to those ranks (Field, 2005). However, in recognition of the fact that parametric techniques are regarded as being more robust, a Pearson's analysis was also conducted, with the intention being that if approximately the same results were found, that we would use the parametric results as the basis for subsequent analyses.

11.5.3 Multivariate

Having identified significant relationships between the DVs and the IVs, the next step was to conduct a series of hierarchical multiple regressions, with a view towards assessing the ability of the relevant IVs to predict levels of each individual DV among participants, when controlling for personality and sex. Multiple regression analysis allows a researcher to reliably estimate the proportion of overall variance in a DV which can be attributed to an individual IV or specifically selected combination of IVs. Tabachnick and Fidell (2007) outline how the procedure is similar to that followed when investigating correlations, and offer a model including weightings of all IVs which provide the best predictions of scores on a particular DV. In hierarchical regression, IVs are added in blocks, i.e., in the first block, the estimate of the contribution of each IV is provided while controlling for the other IVs, and in the second block, individual IV contributions are measured while controlling for all IVs in both blocks.

Tabachnick and Fidell (2007) point out that, in terms of theory, multiple regression is most effective as a statistical technique when the IVs are correlated with the relevant DVs, and not one another. When IVs are highly correlated with each other, this leads to those variables being reported as making a low unique contribution to the model, as shared contributions will not be included in individual estimates.

11.5.4 Depressive symptoms results by caseness

The bivariate and multivariate analyses for CES-DC scores were repeated using caseness as opposed to absolute scores, with a view towards assessing whether the same patterns would emerge in the results. For these purposes, that meant

transforming the continuous CES-DC scale into a categorical variable, with the recommended cut-off point of scores above 15 taken as the dividing line. So, scores from 0-15 were given the value 0, indicating 'not depressed' and scores from 16-60 were assigned the value 1, indicating 'depressed'.

Treating depressive symptoms as a categorical variable meant that different statistical techniques needed to be applied when conducting the relevant analyses. Whereas correlation, an independent samples t-test, and hierarchical multiple regression were conducted when examining the relationship between CES-DC scores and the other variables, analysis by caseness meant conducting a series of independent samples t-tests, a chi square test, and binomial linear regression, respectively.

The results of all statistical analyses for this study are presented in the relevant Results section, chapter 13.

12. ETHICS (STUDY 1: INITIAL SURVEY)

Research involving human participants by its very nature requires specific consideration of ethical matters. In this study, the ethical principles borne in mind were the 2010 revision of the Psychological Society of Ireland's *Code of Professional Ethics*. The code consists of four overall ethical principles: respect for the rights and dignity of the person, competence, responsibility, and integrity. Each principle will be discussed briefly in turn.

12.1 Respect for the Rights and Dignity of the Person

The principles state that the privacy and confidentiality of participants must be respected, e.g., only collect information which is directly relevant to the purposes of a research investigation. It is also important to observe all the necessary requirements as it relates to informed consent and freedom of consent. In this research, it was made clear to all potential participants that involvement was voluntary. Also, because the target population was all under 18, consent of a parent/guardian was sought.

12.2 Competence

The principles insist that researchers recognise the boundaries of their own competence, and do not go beyond those boundaries. This study posed no challenges to the provisions of this principle, as conducting the survey did not require direct interaction with participants beyond pre- and post-briefings, securing of consent, and distribution and collection of individual survey packets.

12.3 Responsibility

This principle places an onus upon the researcher to protect the dignity and well-being of participants at all points in the process, and also to ensure that the highest standards of scientific integrity are maintained. In this study, participants were never placed in a position where their dignity and well-being may have been put at risk, and in the event that completing the survey raised potentially distressing issues for them, contact details for help-lines and support organisations were included in the survey packet.

12.4 Integrity

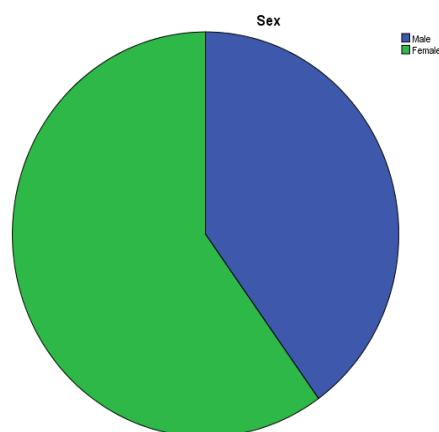
This principle demands that researchers respect the right of participants to receive an appropriate explanation of the nature of the research being conducted, and that such explanations be offered in language that can be easily understood. Also, there is an onus on the researcher to ensure that all relevant information related to consent be communicated in a clear and straightforward manner.

13. RESULTS (STUDY 1: INITIAL SURVEY)

In this section, results of the statistical analysis will be presented. In the first instance, data was cleaned in preparation for the generation of descriptive statistics. These results will be presented for IVs and DVs, and also demographic variables. Following this, the results of bivariate analyses will be presented, outlining which statistical procedures were conducted and the relationships existing between individual IVs and DVs. Finally, the results of subsequent multivariate analyses will be presented. The descriptive statistics section will deal with the demographic variables, followed by the three DVs, and then the nine IVs (including personality dealt with separately as extraversion and neuroticism). Bivariate and multivariate analysis sections will discuss data by DV.

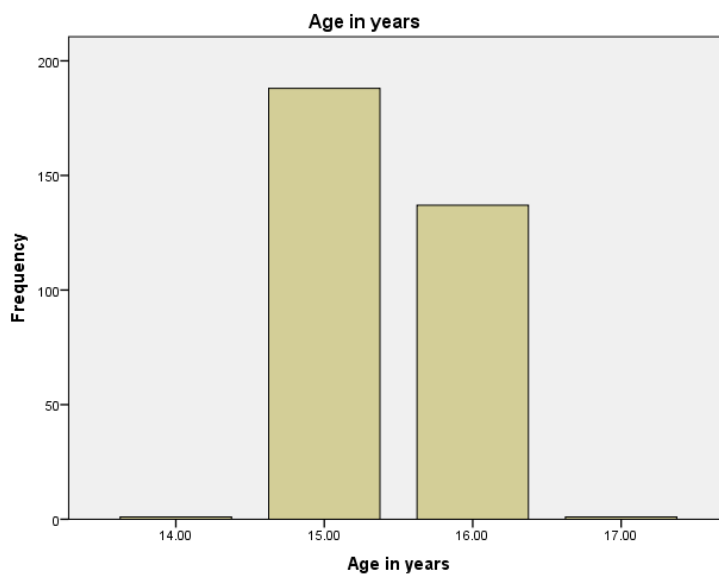
13.1 Descriptive Results

Figure 13.1: Sex



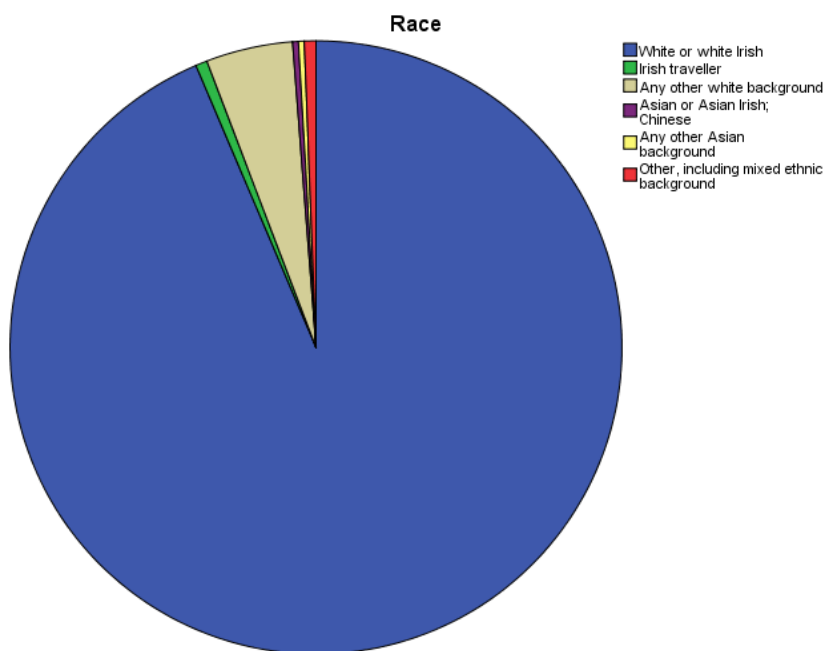
Starting with demographic factors, 196 (59.9%) of the participants were female, while 131 (40.1%) were male. This sex-based breakdown of participants is shown in Figure 13.1.

Figure 13.2: Age



Participants ranged in age from 14 to 17 years, with a median age of 15 years, a mean age of 15.42 years, and a standard deviation of .51 years. The distribution of age in the sample is represented in Figure 13.2.

Figure 13.3: Ethnicity



In terms of ethnicity, 306 (93.6%) participants identified themselves as ‘white or white Irish’, 15 (4.6%) as being of ‘any other white background’, 2 (.6%) as being an ‘Irish traveller’, 2 as being ‘other, including mixed ethnic background’. 1 (.3%) as ‘Asian or Asian Irish; Chinese’, and 1 (.3%) as ‘Any other Asian background’. The breakdown of participants by ethnicity is shown in Figure 13.3.

Table 13.1: Descriptive statistics for survey DVs and IVs

	Min	Max	Mean	Median	Std. Dev.
Subjective Happiness	6.00	27.00	19.90	20.00	3.82
Depressive Symptoms	1.00	48.00	16.62	14.00	10.10
Life satisfaction	5.00	35.00	24.80	26.00	6.40
Gratitude	15.00	42.00	33.86	35.00	4.82
Optimism	.00	24.00	13.32	14.00	4.50
Self-efficacy	14.00	40.00	28.81	29.00	4.83
Mindfulness	19.00	83.00	52.02	51.00	11.93
Resilience	24.00	98.00	71.62	73.00	13.31
Self-esteem	.00	30.00	18.89	20.00	5.71
Extraversion	23.00	53.00	40.53	41.00	6.32
Neuroticism	13.00	59.00	34.52	34.00	9.74
ACSQ Internal/External	9.00	52.00	32.82	33.00	6.66
ACSQ Stable/Unstable	7.00	46.00	26.05	26.00	8.00
ACSQ Global/Specific	7.00	46.00	21.10	21.00	7.70
ACSQ Composite	30.00	140.00	79.97	81.00	18.36

Table 13.1 shows the minimum and maximum scores, as well as the mean, median, and standard deviation for each of the IVs and DVs. See Appendix 7 for histograms detailing the distribution of scores for each variable.

13.2 Bivariate Analysis

In this section of the report, results of analyses of the relationships between individual IVs and DVs are reported. The results will be presented according to DV. In the first instance, the three DVs were found to be strongly related to each other, while at the same time being distinct. When examined along the same lines described below, there was a strong positive correlation found between SHS and SWLS scores ($r = .63$, $n = 327$, $p < .0005$), and strong negative correlations between CES-DC scores and SHS ($r = -.60$, $n = 327$, $p < .0005$) and SWLS totals ($r = -.56$, $n = 327$, $p < .0005$).

Subjective Happiness

As the three DVs and nine IVs were continuous variables, correlation was deemed to be the most appropriate form of analysis. As the participant scores for each of the three DVs were not normally distributed, non-parametric techniques were used in the first instance in all bivariate analyses. With this in mind, a Spearman's rho correlation was run to determine the relationship between subjective happiness and the nine IVs – gratitude, optimism, self-efficacy, mindfulness, resilience, self-esteem, extraversion, neuroticism, and attributional style. However, as parametric techniques are regarded as being more robust, the Pearson r analysis was also conducted. When compared, the results in each approach were similar; therefore, the parametric findings are presented here.

Table 13.2: Correlations between Subjective Happiness and IVs

IV	R value	P	N
Gratitude	.47	<.0005	326
Optimism	.57	<.0005	326
Self-efficacy	.40	<.0005	326
Mindfulness	.33	<.0005	322
Resilience	.53	<.0005	327
Self-esteem	.67	<.0005	323
Extraversion	.34	<.0005	318
Neuroticism	-.59	<.0005	311
ACSQ – Internal/External	-.24	<.0005	327
ACSQ – Stable/Unstable	-.42	<.0005	327
ACSQ – Global/Specific	-.45	<.0005	327
ACSQ – Composite	-.46	<.0005	327

As shown in Table 13.2, there were medium to large positive correlations between subjective happiness and gratitude ($r = .47$, $n = 326$, $p < .0005$), optimism ($r = .57$, $n = 326$, $p < .0005$), self-efficacy ($r = .40$, $n = 326$, $p < .0005$), mindfulness ($r = .33$, $n = 322$, $p < .0005$), resilience ($r = .53$, $n = 327$, $p < .0005$), self-esteem ($r = .67$, $n = 323$, $p < .0005$), neuroticism ($r = -.59$, $n = 311$, $p < .0005$), and extraversion ($r = .34$, $n = 318$, $p < .0005$), a small negative correlation with attributional style (internal/external) ($r = -.24$, $n = 327$, $p < .0005$), and medium to large negative correlations between happiness and attributional style (stable/unstable) ($r = -.42$, $n = 327$, $p < .0005$), attributional style (global/specific) ($r = -.45$, $n = 327$, $p < .0005$), and attributional style (composite) ($r = -.46$, $n = 327$, $p < .0005$).

Depressive Symptoms

As with subjective happiness, both Spearman's rho and Pearson r tests were run to determine the relationship between depressive symptoms and the nine IVs – gratitude, optimism, self-efficacy, mindfulness, resilience, self-esteem, extraversion, neuroticism, and attributional style. As the results provided by each analysis were broadly similar, the figures presented here will be those offered by the parametric procedure.

Table 13.3: Correlations between Depressive Symptoms and IVs

IV	R value	P	N
Gratitude	-.37	<.0005	326
Optimism	-.49	<.0005	326
Self-efficacy	-.39	<.0005	326
Mindfulness	-.40	<.0005	322
Resilience	-.49	<.0005	327
Self-esteem	-.72	<.0005	323
Extraversion	-.07	<.0005	318
Neuroticism	.66	<.0005	311
ACSQ – Internal/External	.30	<.0005	327
ACSQ – Stable/Unstable	.44	<.0005	327
ACSQ – Global/Specific	.48	<.0005	327
ACSQ – Composite	.50	<.0005	327

As shown in Table 13.3., there were medium to large negative correlations between depressive symptoms and gratitude ($r = -.37$, $n = 326$, $p < .0005$), optimism ($r = -.49$, n

= 326, $p < .0005$), self-efficacy ($r = -.39$, $n = 326$, $p < .0005$), mindfulness ($r = -.40$, $n = 322$, $p < .0005$), self-esteem ($r = -.71$, $n = 323$, $p < .0005$), and resilience ($r = -.49$, $n = 327$, $p < .0005$), a small to medium positive correlation with attributional style (internal/external) ($r = .30$, $n = 327$, $p < .0005$), and medium to large positive correlations with neuroticism ($r = .66$, $n = 311$, $p < .0005$), attributional style (stable/unstable) ($r = .44$, $n = 327$, $p < .0005$), attributional style (global/specific) ($r = .48$, $n = 327$, $p < .0005$), and attributional style (overall) ($r = .50$, $n = 327$, $p < .0005$).

Life Satisfaction

As with subjective happiness and depressive symptoms, both Spearman's rho and Pearson r tests were run to determine the relationship between life satisfaction and the nine IVs – gratitude, optimism, self-efficacy, mindfulness, resilience, self-esteem, extraversion, neuroticism, and attributional style. As the results provided by each analysis were broadly similar, the figures presented here will be those offered by the parametric procedure.

Table 13.4: Correlations between Life Satisfaction and IVs

IV	R value	P	N
Gratitude	.54	<.0005	326
Optimism	.55	<.0005	326
Self-efficacy	.49	<.0005	326
Mindfulness	.36	<.0005	322
Resilience	.59	<.0005	327
Self-esteem	.73	<.0005	323
Extraversion	.21	<.0005	318
Neuroticism	-.53	<.0005	311
ACSQ – Internal/External	-.20	<.0005	327
ACSQ – Stable/Unstable	-.39	<.0005	327
ACSQ – Global/Specific	-.40	<.0005	327
ACSQ – Composite	-.41	<.0005	327

As shown in Table 13.4, there were medium to large positive correlations between life satisfaction and gratitude ($r = .54$, $n = 326$, $p < .0005$), optimism ($r = .55$, $n = 326$, $p < .0005$), self-efficacy ($r = .49$, $n = 326$, $p < .0005$), mindfulness ($r = .36$, $n = 322$, $p < .0005$), self-esteem ($r = .73$, $n = 323$, $p < .0005$), and resilience ($r = .59$, $n = 327$, $p < .0005$), medium to large negative correlations between life satisfaction and neuroticism ($r = -.53$, $n = 311$, $p < .0005$), attributional style (stable/unstable) ($r = -.39$, $n = 327$, $p < .0005$), attributional style (global/specific) ($r = -.40$, $n = 327$, $p < .0005$), and attributional style (overall) ($r = -.41$, $n = 327$, $p < .0005$), and a small negative correlation between life satisfaction and attributional style (internal/external) ($r = -.20$, $n = 327$, $p < .0005$).

Examining sex

The next step was to look at what if any differences could be found between males and females when looking at scores on the three DVs. As mentioned previously, results derived using parametric techniques are reported when there are no differences of note between the analyses, independent samples t-tests in this case; however, a difference was detected for SWLS, so a non-parametric analysis (Mann-Whitney U test) was conducted for that variable.

An independent samples t-test was conducted to compare scores between males and females on the DVs. For subjective happiness, a significant difference in scores was found; $t(325) = 3.02$, $p = .003$ (two-tailed), $\eta^2 = .03$. A significant difference in scores between the sexes was also found for depressive symptoms $t(325) = -6.74$, $p < .001$, $\eta^2 = .12$. Mann-Whitney results indicated a significant association between life satisfaction and sex ($U = 10944$, $z = -2.27$, $p = .024$).

This analysis also suggested that male participants tended to report higher scores than females on subjective happiness and life satisfaction, and lower scores on depressive symptoms. These scores are detailed in Tables 13.5-13.7.

Table 13.5: Subjective Happiness scores by sex

Sex	N	Mean	Median
Male	131	20.67	21
Female	196	19.39	20

Table 13.6: Depressive Symptoms scores by sex

Sex	N	Mean	Median
Male	131	12.58	11
Female	196	19.32	17

Table 13.7: Life Satisfaction scores by sex

Sex	N	Mean	Median
Male	131	26.06	27
Female	196	23.96	26

Based on these findings, sex was incorporated into the regression model used in subsequent analysis.

13.3 Multivariate Analysis

Having conducted bivariate analyses, it was decided that the next appropriate step was to conduct multivariate analyses. Multiple regressions were used, with a view towards investigating the degree to which the IVs accounted for the variance in scores seen in the DVs. Three separate hierarchical regressions were applied to the data, one for each of the DVs; IVs in each model included those found to be significant in bivariate analyses related to the DV in question.

With a view towards checking for violation of assumptions, a correlation matrix of DVs and IVs was constructed (see Appendix 8), and a normal probability plot and

scatterplot of standardised residuals (see Appendix 9) were examined for each regression.

The correlation matrix showed that the vast majority of the IVs did not correlate to each other at such a high level as to suggest multi-collinearity, i.e., that different variables are measuring the same thing (Tabachnick & Fidell, 2007). However, the various dimensions of the ACSQ exhibited multi-collinearity. The composite ACSQ score was the most powerfully linked, therefore that was the one carried forward into the multiple regression analysis.

Multiple regressions were applied to the data relating to subjective happiness, depressive symptoms, and life satisfaction scores. The results of these analyses are presented below.

Subjective Happiness

Hierarchical multiple regression was used to assess the ability of five cognitive measures (attributional style, self-esteem, resilience, self-efficacy, and optimism) to predict levels of subjective happiness, after controlling for personality (neuroticism and extraversion) and sex. Sex, extraversion, and neuroticism were entered as step 1, and explained 42% of the variance in subjective happiness. Table 13.8 presents step 1 in this process, while Table 13.9 presents step 2, in which the cognitive variables are added to the model.

Table 13.8: Hierarchical multiple regression – Subjective Happiness and Control variables

Model		b	SE	Beta	t	Sig.
Step 1						
	Constant	20.99	1.33		15.74	.000
	Sex	-.20	.37	-.03	-.53	.596
	Neuroticism	-.21	.02	-.55	-11.51	.000
	Extraversion	.16	.03	.27	5.96	.000

Table 13.9: Hierarchical multiple regression – Subjective Happiness and Cognitive variables

Model		b	SE	Beta	t	Sig.
Step 2						
	Constant	12.95	2.03		6.38	.000
	Sex	.19	.34	.03	.56	.574
	Neuroticism	-.09	.02	-.23	-3.99	.000
	Extraversion	.12	.03	.19	4.46	.000
	Attrib Style	-.01	.01	-.05	-1.01	.313
	Self-esteem	.22	.05	.33	4.53	.000
	Resilience	.02	.02	.08	1.26	.208
	Self-efficacy	-.06	.05	-.08	-1.41	.159
	Optimism	.14	.05	.17	3.01	.003

After entry of the five cognitive variables as step 2, the total variance explained by the model as a whole was 54.6%, $F(8,293) = 44.07, p < .001$. The five cognitive variable measures explained 12.6% of the variance in happiness, after controlling for sex, extraversion, and neuroticism, $R^2 \text{ change} = .13, F \text{ change}(5, 293) = 16.26, p < .001$. In the final model, control measures neuroticism and extraversion were found to have made a statistically significant contribution, as did IVs self-esteem ($\beta = .33, p < .001$), and optimism ($\beta = .17, p < .005$).

The same process was then followed on two more occasions, to look at the ability of gratitude and mindfulness respectively to predict levels of happiness, also controlling for personality (neuroticism and extraversion) and sex.

Table 13.10: Hierarchical multiple regression – Subjective Happiness and Gratitude

Model	b	SE	Beta	t	Sig.
Step 2					
Constant	13.34	1.73		7.73	.000
Sex	-.43	.35	-.06	-1.24	.214
Neuroticism	-.19	.02	-.45	-9.69	.000
Extraversion	.14	.03	0.24	5.47	.000
Gratitude	.23	.04	.29	6.44	.000

Table 13.11: Hierarchical multiple regression – Subjective Happiness and Mindfulness

Model		b	SE	Beta	t	Sig
Step 2						
	Constant	17.64	1.75		10.07	.000
	Sex	-.24	.37	-.03	-.67	.505
	Neuroticism	-.19	.02	-.49	-9.53	.000
	Extraversion	.17	.03	.28	6.30	.000
	Mindfulness	.04	.02	.14	2.90	.004

Both sets of regressions highlighted statistically significant findings on the ability of gratitude and mindfulness respectively to predict levels of happiness. The examination of mindfulness found that it accounted for 1.6% of the variance in SHS scores, while gratitude accounted for 7.1%, with personality and sex controlled for in each regression.

Depressive Symptoms

Following the bivariate analyses, hierarchical multiple regression was used to assess the ability of five cognitive measures (attributional style, self-esteem, resilience, self-efficacy, and optimism) to predict levels of depression, after controlling for personality (neuroticism) and sex. Sex and neuroticism were entered as step 1, and explained 44.6% of the variance in depression. Table 13.12 presents step 1 in this process, while Table 13.13 presents step 2, in which the cognitive variables are added to the model.

Table 13.12: Hierarchical multiple regression – Depressive Symptoms and Control variables

Model		b	SE	Beta	t	Sig.
Step 1						
	Constant	-9.63	1.84		-5.22	.000
	Sex	2.63	.92	.13	2.86	.005
	Neuroticism	.64	.05	.62	13.74	.000

Table 13.13: Hierarchical multiple regression – Depressive Symptoms and Cognitive variables

Model		b	SE	Beta	t	Sig.
Step 2						
	Constant	14.66	4.89		3.00	.003
	Sex	1.69	.85	.08	1.99	.048
	Neuroticism	.29	.06	.28	5.02	.000
	Attrib Style	.04	.03	.08	1.65	.100
	Self-esteem	-.81	.12	-.46	-6.60	.000
	Resilience	-.05	.05	-.06	-1.02	.310
	Self-efficacy	.15	.11	.07	1.32	.188
	Optimism	.02	.12	.01	.15	.878

After entry of the five cognitive measures as step 2, the total variance explained by the model as a whole was 57.6%, $F(7,299) = 57.99$, $p < .001$. The five cognitive

variable measures explained 13% of the variance in depression, after controlling for sex and neuroticism, R^2 change = .13, F change (5, 299) = 18.27, $p < .001$. In the final model, control measure variables sex and neuroticism were found to have made a statistically significant contribution, as was one of the cognitive variables - self-esteem ($\beta = -.46$, $p < .001$).

The same process was then followed on two more occasions, to look at the ability of gratitude and mindfulness respectively to predict levels of depressive symptoms, in these instances controlling for personality (neuroticism) and sex.

Table 13.14: Hierarchical multiple regression – Depressive Symptoms and Gratitude

Model	b	SE	Beta	t	Sig.
Step 2					
Constant	6.66	3.88		1.71	.087
Sex	3.19	.90	.16	3.55	.000
Neuroticism	.56	.05	.54	11.82	.000
Gratitude	-.43	.09	-.21	-4.73	.000

Table 13.15: Hierarchical multiple regression – Depressive Symptoms and Mindfulness

Model	b	SE	Beta	t	Sig.
Step 2					
Constant	.27	3.19		.08	.934
Sex	2.72	.91	.13	2.99	.003
Neuroticism	.57	.05	.55	11.41	.000
Mindfulness	-.15	.04	-.17	-3.76	.000

Both sets of regressions highlighted statistically significant findings as it relates to the ability of gratitude and mindfulness to predict levels of depression. The examination of mindfulness found that it accounted for 2.5% of the variance in depression scores, while gratitude accounted for 3.8% of the variance, when controlling for sex and neuroticism in each analysis.

Life Satisfaction

Hierarchical multiple regression was then used to assess the ability of five cognitive measures (attributional style, self-esteem, resilience, self-efficacy, and optimism) to predict levels of life satisfaction, after controlling for personality (neuroticism and extraversion) and sex. Sex, extraversion, and neuroticism were entered as step 1, and explained 30.3% of the variance in life satisfaction. Table 13.16 presents step 1 in this process, while Table 13.17 presents step 2, in which the cognitive variables are added to the model.

Table 13.16: Hierarchical multiple regression – Life Satisfaction and Control variables

Model		b	SE	Beta	t	Sig.
Step 1						
	Constant	30.99	2.45		12.63	.000
	Sex	-.19	.68	-.01	-.28	.783
	Neuroticism	-.34	.03	-.51	-9.80	.000
	Extraversion	.14	.05	.14	2.79	.006

Table 13.17: Hierarchical multiple regression – Life Satisfaction and Cognitive variables

Model		b	SE	Beta	t	Sig.
Step 2						
	Constant	4.96	3.35		1.48	.140
	Sex	1.20	.57	.09	2.12	.035
	Neuroticism	-.04	.04	-.06	-1.11	.267
	Extraversion	.01	.04	.01	.22	.824
	Attrib Style	-.00	.02	-.01	-.24	.815
	Self-esteem	.61	.08	.54	7.54	.000
	Resilience	.07	.03	.15	2.30	.022
	Self-efficacy	.06	.07	.04	.76	.450
	Optimism	.09	.08	.06	1.13	.258

After entry of the five cognitive measures as step 2, the total variance explained by the model as a whole was 55.9%, $F(8,293) = 46.46, p < .001$. The five cognitive variable measures explained 25.6% of the variance in life satisfaction, after controlling for sex, extraversion, and neuroticism, $R^2 \text{ change} = .26, F \text{ change}(5, 293) = 33.40, p < .001$. In the final model, control variable sex was found to have made a statistically significant contribution, as did IVs self-esteem ($\beta = -.54, p < .001$) and resilience ($\beta = .15, p < .05$).

The same process was then followed on two more occasions, to look at the ability of gratitude and mindfulness respectively to predict levels of life satisfaction, also controlling for personality (neuroticism and extraversion) and sex.

Table 13.18: Hierarchical multiple regression – Life Satisfaction and Gratitude

Model	b	SE	Beta	t	Sig.
Step 2					
Constant	12.57	3.01		4.19	.000
Sex	-.76	.61	-.06	-1.25	.212
Neuroticism	-.25	.03	-.38	-7.73	.000
Extraversion	.09	.05	.09	1.96	.051
Gratitude	.54	.06	.41	8.89	.000

Table 13.19: Hierarchical multiple regression – Life Satisfaction and Mindfulness

Model		b	SE	Beta	t	Sig
Step 2						
	Constant	23.02	3.19		7.22	.000
	Sex	-.30	.67	-.02	-.45	.651
	Neuroticism	-.28	.04	-.43	-7.68	.000
	Extraversion	.16	.05	.16	3.22	.001
	Mindfulness	.11	.03	.20	3.79	.000

Both sets of regressions highlighted statistically significant findings on the ability of gratitude and mindfulness to predict levels of life satisfaction. The examination of mindfulness found that it accounted for 3.2% of the variance in life satisfaction scores, while gratitude accounted for 14.6%, in both instances when controlling for sex and personality.

In this statistical analysis, we have found that each of the three blocks of variables (cognitive, gratitude, and mindfulness) impacted significantly on levels of each of the three DVs (subjective happiness, depressive symptoms, and life satisfaction), when controlling for personality and sex. Arising from these findings, there is justification for using each of the three blocks as the basis for school-based interventions designed to enhance adolescent well-being.

13.4 Depressive symptoms results by caseness

The above sequence of analyses was repeated for depressive symptoms by caseness, as opposed using total scores. Transforming depressive symptoms into a categorical variable (0 = not depressed; 1 = depressed) necessitated using different statistical techniques, as the approaches described above are only appropriate when working with continuous dependent variables.

In the first instance, a series of independent samples t-tests were conducted to assess the relationship between depressive symptoms and the nine IVs.

Table 13.20: Relationship between Depressive Symptoms by caseness and IVs

IV	T value	P	N
Gratitude	5.70	<.0005	326
Optimism	8.04	<.0005	326
Self-efficacy	5.58	<.0005	326
Mindfulness	6.45	<.0005	322
Resilience	7.71	<.0005	327
Self-esteem	12.00	<.0005	323
Extraversion	.14	.893	318
Neuroticism	-9.97	<.0005	311
ACSQ – Internal/External	-4.14	<.0005	327
ACSQ – Stable/Unstable	-6.69	<.0005	327
ACSQ – Global/Specific	-7.82	<.0005	327
ACSQ – Composite	-7.86	<.0005	327

As shown in Table 13.20, significant results were found for depression caseness with all variables, except extraversion. This was consistent with the earlier correlation analysis undertaken using CES-DC total scores. Also, the analysis of the relationship between depression caseness and the ACSQ – Composite variable produced a higher t score than that produced for the three ACSQ dimensions, suggesting that it would be appropriate to carry the Composite variable forward into subsequent analyses. This was also consistent with the findings of the earlier analysis.

The next step was to examine sex and depression caseness. To do this, a chi square test for independence was conducted. Arising from this analysis, a significant association was found between sex and depression caseness, $\chi^2 (1, n=327) = 24.92$, $p < .001$ $\phi = .28$. It was therefore deemed appropriate to carry sex forward into the next analysis. This result was also consistent with the findings of the earlier analysis, in which it was established that there was a difference between males and females on CES-DC total scores.

A series of logistic regressions using depression caseness were then conducted to perform equivalent analyses to the hierarchical multiple regressions using CES-DC totals reported on earlier.

The first logistic regression addressed the impact of five cognitive variables (self-esteem, self-efficacy, resilience, optimism, and attributional style) on depression caseness, with sex and neuroticism used for control purposes. When the control variables were added, the model was found to be statistically significant, $X^2 (2, N = 305) = 90.53$, $p < .001$, indicating that the model was able to distinguish between

respondents who self-reported depressive symptoms above or below the recommended cut-off point. The model explained between 25.7% (Cox and Snell R square) and 34.4% (Nagelkerke R squared), and correctly classified 72.5% of cases. The final model, with the five cognitive variables added, was also statistically significant, $X^2(7, N = 305) = 134.89, p < .001$. The model as a whole explained between 35.7% (Cox and Snell R square) and 47.8% (Nagelkerke R squared), and correctly classified 75.1% of cases. Of the cognitive variables, only self-esteem made a unique statistically significant contribution to the model, $B = -.20, p < .001$.

The second logistic regression addressed the impact of mindfulness scores on depression casesness, with sex and neuroticism used for control purposes. When the control variables were added, the model was found to be statistically significant, $X^2(2, N = 308) = 90.18, p < .001$, indicating that the model was able to distinguish between respondents who self-reported depressive symptoms above or below the recommended cut-off point. The model explained between 25.4% (Cox and Snell R square) and 34% (Nagelkerke R squared), and correctly classified 72.1% of cases. The final model, with the mindfulness variable added, was also statistically significant, $X^2(3, N = 308) = 102.10, p < .001$. The model as a whole explained between 28.2% (Cox and Snell R square) and 37.8% (Nagelkerke R squared), and correctly classified 71.8% of cases. Mindfulness made a unique statistically significant contribution to the model, $B = -.04, p < .001$.

The third logistic regression addressed the impact of gratitude scores on depression casesness, with sex and neuroticism used for control purposes. When the control variables were added, the model was found to be statistically significant, $X^2(2, N =$

311) = 90.73, $p < .001$, indicating that the model was able to distinguish between respondents who self-reported depressive symptoms above or below the recommended cut-off point. The model explained between 25.3% (Cox and Snell R square) and 33.9% (Nagelkerke R squared), and correctly classified 72% of cases. The final model, with the gratitude variable added, was also statistically significant, $X^2(3, N = 311) = 105.41$, $p < .001$. The model as a whole explained between 28.7% (Cox and Snell R square) and 38.5% (Nagelkerke R squared), and correctly classified 72% of cases. Gratitude made a unique statistically significant contribution to the model, $B = -.12$, $p < .001$.

These results offered further support for the use each of the three blocks of independent survey variables – cognitive, mindfulness, and gratitude - as the basis for school-based interventions designed to enhance adolescent well-being.

14. SUMMARY (STUDY 1: INITIAL SURVEY)

The aim of this research was to examine the extent to which mindfulness, gratitude, and five cognitive variables (optimism, self-efficacy, resilience, self-esteem, and attributional style) can predict and/or influence levels of happiness, depression, and life satisfaction in an adolescent participant group, and when controlling for sex and personality (neuroticism and extraversion).

Bivariate analyses showed statistically significant correlations between depression and optimism, self-efficacy, resilience, self-esteem, neuroticism, attributional style, mindfulness, and gratitude. Similar correlations were found when looking at happiness and life satisfaction in turn, with the one difference being that a statistically significant correlation was also found between these two variables and extraversion.

The next step was to see what if any difference could be found between males and females when looking at scores for the three DVs – subjective happiness, depressive symptoms, and life satisfaction. Significant findings were reported for all three variables when grouped by sex, with the analysis also suggesting that male participants self-reported more positive scores across the board. Arising from these findings, sex was added to the regression model for subsequent analysis.

Following the bivariate analysis, a series of hierarchical multiple regressions were run to assess the ability of the cognitive measures, mindfulness, and gratitude to predict levels of depressive symptoms, subjective happiness, and life satisfaction, while controlling for sex and personality (neuroticism for depression, and both neuroticism and extraversion when looking at happiness and life satisfaction). For depression, it

was found that sex and neuroticism explained 44.6% of the variance in scores. When the five cognitive measures were added, the total variance explained by the model increased to 57.6%. In the final model, neuroticism, age, and self-esteem were all found to be statistically significant.

This process was then repeated to look at the impact of mindfulness and gratitude respectively on CES-DC scores, with both shown to make a statistically significant contribution. Individually, mindfulness accounted for 2.5% of the variance, while gratitude accounted for 3.8%.

For subjective happiness, sex, extraversion, and neuroticism accounted for 42% of the variance, while the five cognitive variables contributed an additional 13%, and subsequent analyses looking individually at mindfulness and gratitude found that they accounted for 1.6% and 7.1% respectively.

When looking at life satisfaction, sex, extraversion, and neuroticism explained 30.3% of the variance in scores, while the cognitive factors accounted for an additional 25.6% of the variance. The regression model looking at the contribution of mindfulness found that it explained 3.2% of the variance, while gratitude accounted for 14.6%.

These analyses offered up findings which showed that each of the three blocks of variables added significantly to the variance in the scores for each of the three DVs, when controlling for personality and sex. This strongly suggested a sound basis for proceeding with a follow-up intervention programme informed by mindfulness,

gratitude, and cognitive behavioural approaches, with this position further supported by a linear regression analysis by depression caseness.

Against this backdrop, following the statistical analysis of the survey, it was decided to proceed with three interventions in three schools, one intervention to be conducted in each school. Consistent with the positive psychology backdrop informing this work and also in recognition of the fact that the sample populations were non-clinical in nature, each intervention was specifically chosen because it was predicated upon a desire to enhance/build on existing strengths, as opposed to being overtly therapeutic in direction. Three short interventions (four weeks/sessions) were conducted in participating schools – a Cognitive Behavioural Coaching programme, a counting blessings gratitude exercise, and a mindfulness programme informed by an MBSR perspective and designed for an adolescent population. Each intervention programme saw the participant population randomly assigned to either active or no-intervention control groups. It was hypothesised that these three interventions would impact positively on self-reported well-being over time. As with the survey, well-being in the follow-up intervention phase was operationalised as higher scores in subjective happiness and life satisfaction, and lower scores in depressive symptoms. Measures were taken immediately prior to randomisation at baseline, then at post-intervention, and also approximately nine months on from the conclusion of each programme.

15. METHODOLOGY (FOLLOW-UP INTERVENTION PROGRAMMES)

On the basis of the results of the initial survey, as detailed in the preceding chapter, the next step was to conduct a series of follow-up intervention studies, with a view towards assessing the efficacy of those programmes in enhancing well-being among school-going adolescents. The results of these experimental studies will be presented in the coming chapters. Prior to presenting those results, in this chapter we will detail the methodological approach pursued in each of the three studies.

15.1 True Experimental Design

The methodology employed in these three intervention programmes is that of a *true experiment*.

Davis and Bremner (2007) describe an experiment as a test of cause-effect relationships. This test is facilitated by the collection of evidence on two variables, with a view towards demonstrating the effect of one upon the other. They position the potential usefulness of experimental design to psychological research against the backdrop of psychology's two major goals: to provide a description of human behaviour and the processes underlying it, and also to provide explanations for that behaviour. They note that many different research methods can be deployed in seeking to achieve these goals, but that the experimental method is particularly useful as it relates to explanation. Davis and Bremner state that the experimental method goes beyond the descriptive problem, also offering possible answers as to why a given behaviour manifests, adding: "In other words, by using experiments it is possible to answer questions about the causes of behaviour" (p. 66).

Davis and Bremner (2007) trace the use of experiments in psychological research back to 19th century German psychophysics, specifically Helmholtz's investigations into visual perception in the 1860s, and Wundt's establishing of the first experimental psychology laboratory in 1879. From there, they point to the experimental design methodology as developing in tandem with the rise of statistics and behaviourism in the early 20th century, with the use of experiments in psychology subsequently becoming associated with the discipline's acceptance as part of mainstream science. Davis and Bremner also note that while behaviourism was largely focused on observable processes and questioned the appropriateness of psychology devoting attention to unobservable processes, the vast majority of psychologists using experimental methodologies in the modern era do so specifically to investigate processes that cannot be clearly observed.

While Davis and Bremner (2007) stress the key advantage of the experimental method as being its capacity to offer explanations of cause-effect relationships, they also point to potential disadvantages. The main point they highlight in this regard is ecological validity, stating that when experiments are negatively criticised this tends to be the primary basis for doing so. Ecological validity in this context refers to the controlled nature of experiments, e.g., findings generated in a laboratory may or may not offer relevant points about life outside the laboratory/controlled environment. The ecological validity issue raises questions about the external validity of experimental research. However, Davis and Bremner stress that despite such concerns experiments remain an attractive option when seeking to answer causal questions. On this point, they contrast experiments with correlational studies, which function well in 'real-life'

settings and can offer insights into normal behaviour, but few as it relates to the causes of relationships between events.

Davis and Bremner (2007) state that there are two basic experimental designs from which all more complex designs emerge – between-subjects and within-subjects. In the former approach, two or more groups receive different levels of the IV, while with the latter all participants will eventually receive all conditions or levels of the IV. In the three studies to be reported here, a true experimental between-subjects design was pursued. Given the nature of the research question, asking to what extent exposure to cognitive behavioural coaching, mindfulness, or gratitude interventions would impact upon the well-being of active condition participants, it was necessary to be able to compare pre- and post-scores between participant groups which received the relevant programme and control groups which did not.

Robson (2002) states that the defining characteristic of a true experimental design is random allocation of participants to however many groups are required by the design (at least two). He also states that one of the main obstacles to conducting true experiments outside the confines of a laboratory relates to that process of random allocation. Davis and Bremner (2007) state that allocating participants to different experimental conditions rather than exposing them to all conditions in turn is the approach most often used in experimental psychology. The allocation process is achieved by randomisation of participants. Davis and Bremner outline that the purpose of randomisation is to ensure that different participant groups are as similar as possible, while the technique also demands that all participants have an equal chance of being allocated to each of the conditions. In procedural terms,

randomisation can be quite straightforward to achieve. The approach used in these three studies was to assign each participant with a number, with assignment to active or control condition depending upon whether that number was odd or even – with odd numbers assigned to the control condition and even numbers to the active condition. This approach is acceptable according to the view set out by Davis and Bremner, for whom the precise method of randomisation is less important than ensuring that at the start of the process each individual participant has an equal chance of being assigned to either condition. They stress that the point of the process is not to eliminate or reduce individual differences within the participant population, but to distribute those differences randomly between the various conditions. In this instance, that meant distributing those differences between two conditions – active and control.

Robson (2002) points to the pre-test post-test randomised controlled trial (RCT), as utilised in these studies, as an example of true experimental design. With this approach, participants are randomly allocated to an experimental group and a ‘no treatment’ control group. The effectiveness of the intervention is then measured by looking at pre-test and post-test changes exhibited by participants in the two groups. These three studies adhere to this approach, but add a longitudinal element in that a second post-test measure of participants was taken, approximately nine months after the completion of each intervention programme and the initial post-test measurement. Robson points to the pre-test element as offering both advantages and disadvantages. On positives, he highlights how taking a pre-test measure allows the researcher to make a direct check on the effectiveness of the method of randomisation used. Also, assessing pre-post differences provides the basis for detecting the effectiveness of whatever intervention strategy has been pursued. In terms of the disadvantages of pre-

tests, Robson points to the implications for workload, but stresses that the main concern is that individual participants may be sensitised to the research, which can then influence how they complete the post-test measures. Robson concludes that it is not easy to detect whether this takes place or not. In these studies, the pre- and post-test measures were taken across a period of several months, which may go some way towards minimising those concerns.

It was decided that a true experimental between-subjects pre-test post-test design was the most appropriate methodology for these three studies. As all participants were of school-going age, it was decided that seeking to recruit participants through schools offered the best opportunity to maximise participation, with consent issues surrounding minors also a factor in these considerations.

15.2 Variables

The purpose of this research was to assess to what extent well-being among an adolescent population would be affected by cognitive-behavioural, mindfulness, and gratitude intervention programmes. For that purpose, dependent variable well-being was operationalised through the use of three variables – subjective happiness, depressive symptoms, and life satisfaction. Those variables, in turn, were operationalised as follows:

Subjective Happiness

This was a continuous variable. It was operationalised as participants' scores on the SHS.

Depressive Symptoms

This was a continuous variable. It was operationalised as participants' scores on the CES-DC.

Life Satisfaction

This was a continuous variable. It was operationalised as participants' scores on the SWLS.

As mentioned previously, three secondary schools were involved in the intervention phase of this research. Each school hosted one intervention – either cognitive-behavioural, mindfulness-related, or gratitude-based, with each of these being reported as a separate study here. Each of the three intervention programmes was designed with a view towards decreasing depressive symptoms and boosting subjective happiness and life satisfaction thereby leading to increased overall well-being. Whether participants were assigned to the active or control condition was the IV in each of these three studies.

Cognitive Behavioural Coaching

This brief intervention ran over four weeks at the participating school – an all-boys secondary school in Cork city. Control group participants attended regularly scheduled classes when active group members attended the intervention sessions.

Aaron Beck, as discussed in chapter 5, was one of the pioneers in the field of cognitive therapy, with this approach leading to the development of CBT. Writing in a paper reviewing 40 years of this therapy, Beck (2005) reiterated that the cognitive

approach to psychopathology was informed by an information-processing model, which highlighted the bias inherent in human processing of external events and internal stimuli, with this leading to individuals distorting the construction of their own experiences. These distortions (e.g., overgeneralisation, mind-reading, and selective abstraction), he maintained, were an expression of underlying dysfunctional beliefs which can become incorporated into enduring cognitive structures, or schemas. Beck proposed the existence of a negative cognitive triad in explaining the symptoms of depression, in that they arise from biased interpretations being attributable to negative representations of the self, the personal world, and the future. Arising from this, CBT models tend to emphasise three key points: individual behavioural responses to events can be shaped by their cognitive appraisals of those events, individuals can monitor and alter how they perceive and interpret events, and that changes in cognition can lead to changes in behaviour.

Palmer and Gyllensten (2008) state that Cognitive Behavioural Coaching (CBC) is an adaptation of CBT. Whereas CBT is treatment-based, psychological coaching is not first and foremost concerned with psychopathology. In CBC, the primary objective relates to improving performance. With this emphasis on building strengths as opposed to being exclusively focused on repairing perceived deficits or weaknesses, CBC is consistent with the principles of positive psychology, the theoretical perspective informing this research as a whole.

Neenan and Palmer (2001) maintain that CBC and CBT as techniques are extremely similar, with the primary difference being that CBC is used with non-clinical groups. According to this characterisation, the main distinction between the two approaches

relates not to the techniques used, but to the respective target populations. For these authors, the key point is that both approaches bill themselves as being ‘cognitive behavioural’, with an implied emphasis on internal, subjective mental processes, and that the reference to therapy or coaching is interchangeable, depending upon whether the population sample is clinical or non-clinical.

Neenan and Palmer (2001) state that CBC is time-limited, goal-directed, and concerned primarily with the here and now. They stress that CBC is a collaborative process in which, as opposed to seeking to solve problems or difficulties for them, participants are guided towards a space in which they can reach their own conclusions. They add that while coaching seeks first and foremost to assist individuals in developing action plans for change, it also actively seeks to facilitate a process in which those involved increase self-awareness, in terms of their thinking, moods, and emotions.

In a book chapter co-written several years later by one of the authors referred to immediately above, Palmer and Szymanska (2007) describe CBC as being more than merely CBT in a non-clinical setting. Instead, it was billed as a fusion of CBT, rational emotive therapy, solution focused approaches, goal setting theory, and social cognitive theory. They add that while it is a non-therapeutic approach for use in non-clinical settings, CBC also assumes that individuals may have poor problem-solving skills or difficulty in applying those skills in appropriate ways, and that the key to understanding their perceptions of problems and situations is in their thoughts, emotions, and behaviours.

Both Neenan and Palmer (2001) and Palmer and Szymanska (2007) point to the instilling of the skills of self-coaching as being one of the main objectives of CBC. One of the ways in which this can be achieved is through the use of Socratic questioning. This type of questioning is designed create a context in which participants generate their own insights and develop their capacity for rational decision making. This process is referred to by Neenan and Palmer as being one of guided discovery.

Mindfulness-Based Programme for Adolescents

This brief intervention ran over four weeks at the participating school – an all-girls secondary school in Cork county. The control group attended regularly scheduled classes when active group participants attended the intervention sessions.

The intervention programme was informed by the Mindfulness-Based Stress Reduction (MBSR; Kabat-Zinn, 1990) approach. As elaborated upon in the dedicated mindfulness chapter earlier in this thesis (see Section 7.4), MBSR is a group-based intervention programme with three key components – sitting meditation, hatha yoga, and body scan. Through repeated mindfulness practice, it is hoped that participating individuals will – arising from increased awareness, both in terms of mind-body and meta-cognition - become more able to detect their own habitual and maladaptive thinking patterns and behaviours, and break those cycles.

As well as emphasising meditation, MBSR includes elements of psycho-education, in which participants discuss their own thoughts and behaviours, and material which encourages the cultivation of awareness and insight into the relative and subjective

nature of individual thoughts and judgements. In this latter respect, MBSR incorporates elements related to CBT. This element of MBSR and mindfulness as a whole facilitates a process in which participants can more accurately detect those aspects of their lives which act as stressors and also whatever patterns of avoidance they may indulge in, with this awareness then facilitating a context in which tasks can be completed more efficiently, procrastination can be overcome, and possibly unhealthy coping patterns can be discarded from individual behavioural repertoires (e.g., Van Dam, Sheppard, Forsyth, & Earleywine, 2011).

In this research, the MBSR programme was adapted for an adolescent audience and also for a relatively brief duration. Four sessions were conducted once a week over a period of four weeks, with each session taking place within one 40-minute class period. Bergen-Cico, Posemotto, and Cheon (2013) highlighted that the efficacy of MBSR when delivered in low dose and brief formats is an emerging area of research, one which may hold promise for both clinical and non-clinical populations. They conducted research with a population of undergraduate students in the United States, in which they examined the potential psychological health benefits of a brief, five-week MBSR programme. They employed a quasi-experimental pre- and post-test design, with 119 participants separated into active ($n = 72$) and control ($n = 47$) conditions. In each session, active condition participants engaged in one hour of practice and one hour of in-class discussion on meta-cognition and the mind-body relationship with physical and emotional health. All participants completed measures of mindfulness, self-compassion, and psychological distress prior to the beginning of the intervention programme and at its conclusion. At T2, an Analysis of Covariance (ANCOVA) showed significant improvements among active condition participants

compared to control participants on psychological health, as measured by mindfulness and self-compassion. The authors concluded that brief MBSR programmes can make a positive impact on psychological health.

Gratitude Intervention

The ‘counting blessings’ approach, as outlined by Emmons and McCullough (2003) and detailed in Section 6.5 in this thesis, seeks to enhance well-being by encouraging individuals to cultivate a sense of gratitude as it relates to their day-to-day life, with the expectation being that doing so will impact positively on self-reported well-being.

The ‘counting blessings’ gratitude intervention ran over a period of four weeks. It was conducted with Transition Year students in an all-girls secondary school in Cork county. Active condition participants maintained weekly gratitude logs, while control group participants were instructed to behave as normally, with no task assigned to them.

15.3 Sampling

The sampling technique used for all three of these studies was simple random sampling, in which the purpose is to create a situation in which all individuals in the sampling frame have an equal chance of taking part in the survey (Fife-Schaw, 2000). This approach to sampling and the manner in which it was conducted were dealt with in Section 10.3.

15.4 Shared information on participants and schools

In each of the three studies, participants were recruited through the relevant school. The three hosting schools were among those which took part in the initial survey. Of the 13 survey schools, four declined the opportunity to take part in the intervention phase, a further four were excluded from consideration on the grounds that the TY overall group size was relatively small (e.g., 25-40 students). Having noted that participation rates for the survey ran at approximately 40-50%, it was decided that schools with relatively large TY groups needed to be targeted for the intervention, with a view towards ensuring that sufficient numbers for each programme be sourced. With schools that satisfied this criterion and expressed an interest in facilitating the intervention, information sessions were arranged, during which the broad focus of the research was explained to TY students and consent forms – both for potential participants and their parents/guardians - were distributed. Students who subsequently returned both signed consent forms to the school were deemed to be intervention study participants.

16. METHOD (STUDY 2: COGNITIVE-BEHAVIOURAL INTERVENTION)

The method section will be divided into six subsections. The first subsection will describe the relevant characteristics of the study participants. The second will provide information on the psychometric scales used in this study (SHS, CES-DC, and SWLS). The third subsection will offer information on the nature of the intervention programme. The fourth will detail what other materials were used in the conduct of this study. The fifth will outline the procedure through which the data were collected, while the sixth subsection will discuss the statistical analyses used.

16.1 Participants

Twenty-seven participants were recruited for this study. The modal age range among the sample was 15-16. The participant group was drawn from TY students in an all-male school in Cork city, Republic of Ireland. All 27 participants were present for the pre-test questionnaires (T1), 23 of the overall group were present at post-test (T2), and 16 of the group completed the later post-test questionnaires (T3).

16.2 Psychometric Scales

Well-being was operationalised using three questionnaires. Each questionnaire was chosen based on its suitability for an adolescent population, and also because these same questionnaires were used in the survey which preceded this study.

Subjective Happiness: Subjective happiness was measured using the SHS

(Lyubomirsky & Lepper, 1999). Information on the content of this scale, as well as reliability and validity, is contained in Section 11.2.

The current study obtained a Cronbach's alpha score of .82 at T1, .76 at T2, and .84 at T3.

Depression: Symptoms of depression were measured using the CES –DC (Weissman, Orvaschel, & Padian, 1980). Information on the content of this scale, as well as reliability and validity, is contained in Section 11.2.

The Cronbach's alpha in this study was .78 at T1, .73 at T2, and .81 at T3.

Life Satisfaction: Life satisfaction was assessed using the SWLS (Diener, Emmons, et al., 1985). Information on the content of this scale, as well as reliability and validity, is contained in Section 11.2.

The Cronbach's alpha in this study was .83 at T1, .68 at T2, and .84 at T3.

16.3 Cognitive Behavioural Coaching Intervention Programme

The in-class intervention programme was led by consultant coaching psychologist Hugh O'Donovan, whose CRAIC model was outlined in Section 5.6. Each of the four 40-minute (one class period) sessions was designed as an action learning intervention, using games and challenges with a view towards raising awareness around how our thinking influences our emotions and behaviour. The expressed purpose of this approach was to draw attention among participants to the fact that because our thinking influences our emotions and vice versa, this means that we have choices in terms of how our thinking styles can be reframed. This was done, for example, by highlighting cognitive distortions such as catastrophising, mind-reading, and

discounting the positive. Each session focused on a particular theme, e.g., how the minds works, how we think, how to build confidence. Also, the sessions were structured in such a way as to transmit one clear message to participants each week, e.g., how you think is linked to how you feel; respecting individual differences; recognising our own talents and those of others; don't believe everything you think.

16.4 Other Materials

In addition to the instruments described above, other materials were also used, including:

- A cover sheet, requesting demographic information from participants, including a four-digit unique identifier (to preserve anonymity but identify each participant for statistical analysis purposes), age, sex, and race/ethnicity (with the options provided here in line with those offered in the most recent Census in Ireland). (See Appendix 14 for cover sheet and questionnaires)
- During the information session held in schools which agreed to participate, consent forms were distributed to students. Individual consent and information forms were provided both for potential participants and also for a parent/guardian, as all students were under 18 years of age. Prior to this, the school principal gave written consent (See Appendix 10, 11, 12, and 13).

16.5 Procedure

Several school visits took place in conjunction with this study. The first visit functioned primarily as an information session, in which the nature of the study was explained, and it was outlined to students what would be expected from them if they

consented to participate. In this case, that meant initially completing three questionnaires and providing relevant demographic information, before then being randomly assigned to active and control conditions. At the conclusion of the initial visit, information sheets and consent forms (both for the students and a parent/guardian) were distributed. As all participants would be aged under 18 years, parental consent was required.

When consent forms were returned to the schools by students who were interested and had been given permission by a parent/guardian to participate, a time was scheduled for pre-test questionnaires to be conducted with the 27 participants. A single class period was allocated to this element of the study in early January 2013. At the conclusion of this data gathering visit, participants were randomly assigned to either the active condition (receiving the intervention) or the control condition (no intervention). Each participant was assigned a number from 1 to 27, and even numbers were assigned to the CBC programme. Therefore, 13 participants were assigned to the intervention and 14 to the control group.

The four CBC sessions took place in the school on a weekly basis in January. Each session was allocated to one school period – 40 minutes. After the final session, all participants present on the day were brought together again to complete post-test questionnaires. Upon consultation with the relevant personnel in the school, it was agreed to gather T3 data in November 2013. Several participants were not available on the day, but in light of the students' increasing workload and other obligations, this was suggested as the best opportunity to return to the school for data gathering purposes.

16.6 Statistical Analyses

16.6.1 Descriptive

The analysis of the data commenced with the application of descriptive statistical techniques. This yielded medians and mean scores, as well as standard deviations for each continuous variable (e.g., depressive symptoms), while also offering percentages for ethnicity, a categorical variable.

16.6.2 Inferential

Following the calculation of descriptive scores for all participants, inferential statistics were applied. The primary purpose of doing so was to detect whether or not there were differences in participants' self-report scores on the outcome variables – subjective happiness, depressive symptoms, and life satisfaction – over time; therefore, a split plot ANOVA was conducted with a view towards detecting interactions between scores at T1 and T2, and also T1 to T2 to T3. Field (2005) details the assumptions that underline the circumstances in which an ANOVA is reliable – data should be from a normally distributed population, the variances in each experimental condition should be fairly similar, observations should be independent, and the relevant DV should be measured on at least an interval scale. Where significant results emerged, post-hoc analyses were conducted.

16.6.3 Analysis by caseness for depressive symptoms

A separate analysis was conducted for depressive symptoms. As well as using a split plot ANOVA for CES-DC total scores, a chi-square test for independence was also conducted for depression caseness, with a view towards assessing whether there was an association between caseness and assignment to the two conditions over time.

The results of all statistical analyses for this study are presented in the relevant Results section.

17. ETHICS (STUDY 2: COGNITIVE-BEHAVIOURAL INTERVENTION)

The ethics followed in this study were identical to those set out for the preliminary study. See Chapter 12 for details.

18. RESULTS (STUDY 2: COGNITIVE-BEHAVIOURAL INTERVENTION)

18.1 Descriptive Results

With regard to demographic factors, the school which hosted the intervention was single-sex, therefore all 27 participants at T1 were male. At baseline, participants ranged in age from 15 to 16 years, with a median age of 16, and a mean age of 15.74.

With regard to ethnicity, 24 (88.9%) participants described themselves as being 'white or white Irish', 2 (7.4%) as being of 'any other white background', and 1 (3.7%) as 'other, including mixed ethnic background'.

Table 18.1: Descriptive statistics for continuous variables

	Min	Max	Mean	Median	Std. Dev.
SHS – CBC (T1)	14.00	26.00	21.15	23.00	3.72
SHS – Ctrl (T1)	13.00	25.00	20.64	21.50	3.63
SHS – CBC (T2)	15.00	25.00	21.10	22.00	3.11
SHS – Ctrl (T2)	14.00	26.00	20.38	20.00	3.73
SHS – CBC (T3)	18.00	26.00	23.29	24.00	2.69
SHS – Ctrl (T3)	13.00	26.00	21.11	22.00	3.86
CES-DC – CBC (T1)	.00	22.00	11.85	12.00	6.82
CES-DC – Ctrl (T1)	.00	18.00	10.29	10.00	5.17
CES-DC – CBC (T2)	3.00	18.00	11.30	10.50	6.66
CES-DC – Ctrl (T2)	2.00	26.00	13.23	14.00	7.84
CES-DC – CBC (T3)	4.00	25.00	10.86	8.00	7.20
CES-DC – Ctrl (T3)	8.00	28.00	14.56	14.00	6.25
SWLS – CBC (T1)	19.00	35.00	27.85	27.00	4.81
SWLS – Ctrl (T1)	18.00	34.00	26.93	26.50	5.01
SWLS – CBC (T2)	19.00	34.00	26.50	27.00	4.77
SWLS – Ctrl (T2)	19.00	32.00	26.31	28.00	4.52
SWLS – CBC (T3)	21.00	35.00	30.43	30.00	5.16
SWLS – Ctrl (T3)	17.00	34.00	26.56	27.00	4.52

Table 18.1 shows the minimum, maximum, mean, median, and standard deviation values for each of the three well-being-related variables, at baseline, immediate post-test, and follow-up. See Appendix 15 for histograms detailing the distribution of scores for each variable.

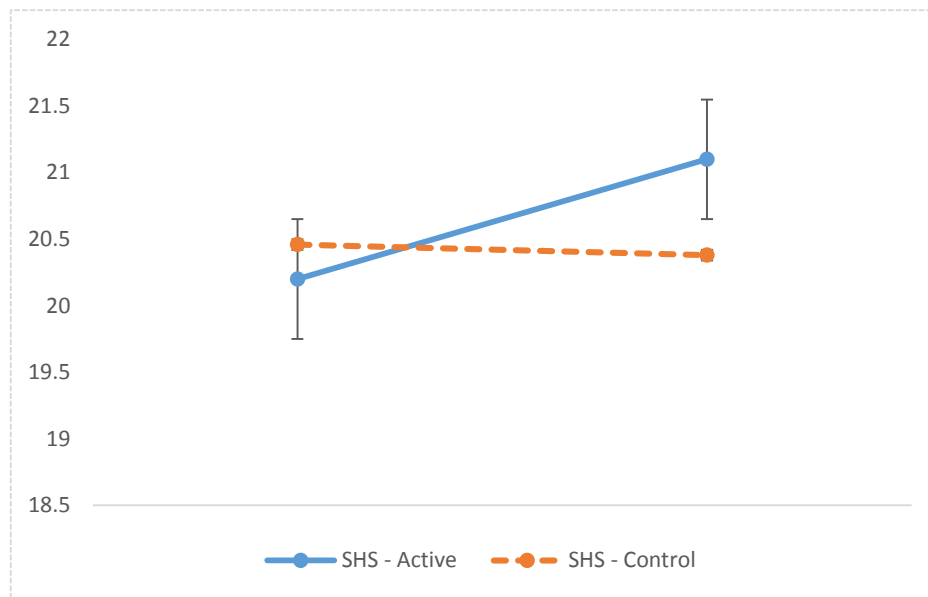
18.2 Inferential Analysis

In this section of the report, results of analyses on how the DV scores reported by active and control condition participants varied over time – from T1 to T2 and from T1 to T2 to T3 – are presented. Split plot ANOVAs were conducted, with a view towards detecting interactions in reported levels of subjective happiness, life satisfaction, and depressive symptoms between active and control group participants over time.

Subjective Happiness

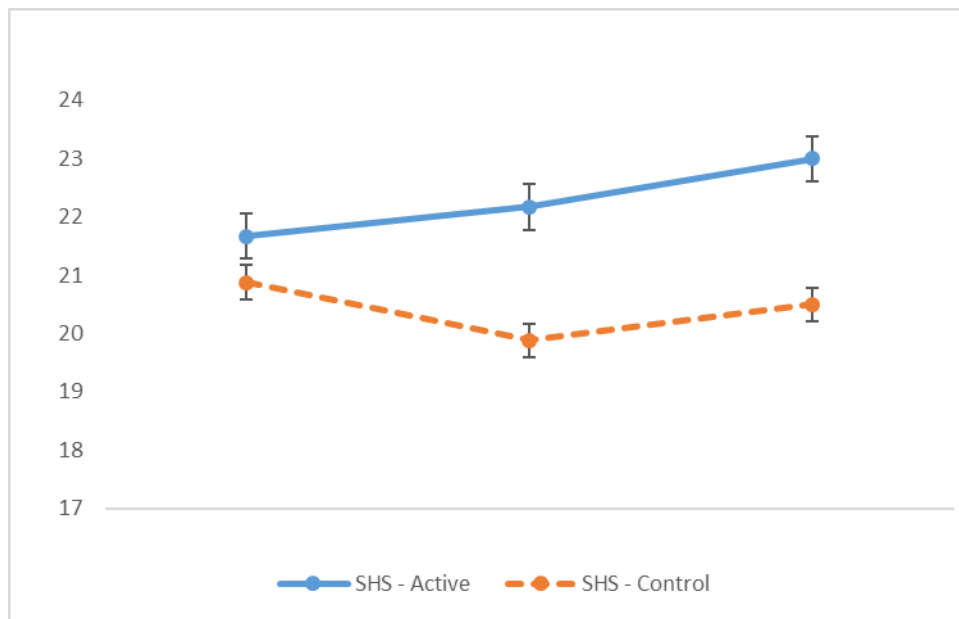
A split plot ANOVA was run with a view towards detecting if there were differences over time reported by active and control group participants. Initial analysis showed that the data did not violate the assumption of homogeneity of variances. There was no significant interaction between assignment to the two conditions and scores at baseline and immediate post-test, Wilks' Lambda = .96, $F(1, 21) = .78$, $p = .39$, partial eta squared = .04. These results indicate no noteworthy differences over time were found between the two participant groups at T1 and T2. Figure 18.1 demonstrates the level of the interaction between active condition and control participants on SHS scores between T1 and T2.

Figure 18.1: Subjective Happiness and interaction effect between T1 and T2



The same process was followed to assess participants' scores at T1, T2, and T3. Initial analyses showed that the relevant assumptions were not violated. There was no significant interaction between assignment to the two conditions and scores at the three data gathering points, Wilks' Lambda = .68, $F(2, 11) = 2.62$, $p = .12$, partial eta squared = .32. The main effect comparing the two conditions was not significant $F(1, 12) = 1.41$, $p = .26$, partial eta squared = .11. These results indicate no noteworthy differences were found between the two participant groups when looked at from T1 to T2 to T3. Figure 18.2 demonstrates the level of the interaction between active condition and control participants on SHS scores from T1 to T2 to T3.

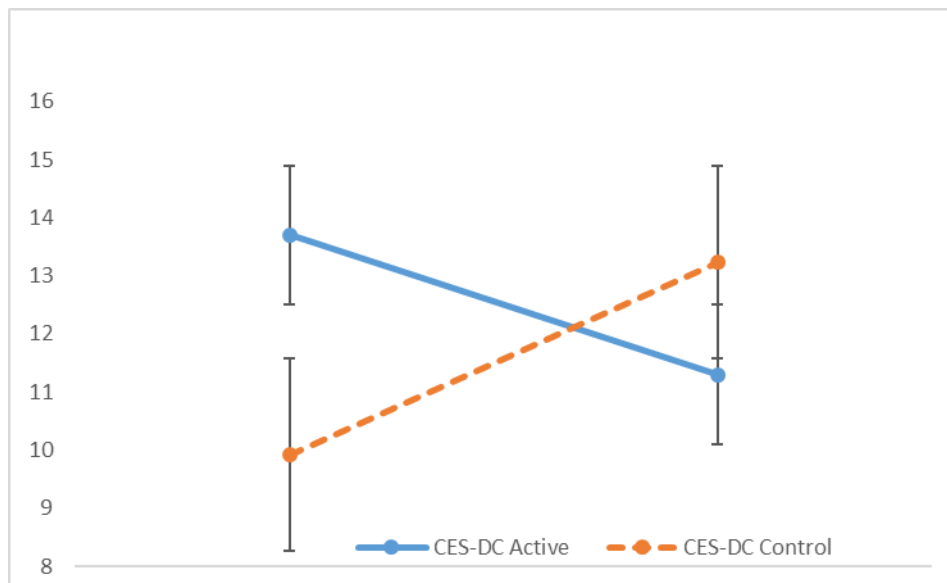
Figure 18.2: Subjective Happiness and interaction effect from T1 to T2 to T3



Depressive Symptoms

A split plot ANOVA was run with a view towards detecting if there were differences over time reported by active and control group participants. Initial analysis showed that the data did not violate the assumption of homogeneity of variances. There was a significant interaction between depressive symptoms and assignment to active or control group when comparing scores at T1 and T2, Wilks Lambda = .79, $F(1, 21) = 5.63$, $p = .027$, partial eta squared = .21. Figure 18.3 shows the estimated marginal means of active and control condition participants on CES-DC scores at T1 and T2.

Figure 18.3: Depressive Symptoms and interaction effect between T1 and T2



There was a partial eta squared value of .21, which, under the guidelines proposed by Cohen (1988), constitutes a large effect size.

Having found a significant interaction between depressive symptoms and assignment to the active condition or the control group when comparing participants' CES-DC scores at T1 and T2, the next appropriate step was to conduct a post-hoc analysis, with a view towards detecting where the differences were to be found. This meant running independent samples t-tests and paired samples t-tests, examining T1 and T2 scores.

In the first instance, two independent samples t-tests were conducted, with a view towards comparing the active and control groups at T1 and T2. These revealed no statistical differences between active and control group participants for depressive symptoms. At T1: active condition ($M = 11.85$, $SD = 6.82$) and control condition ($M = 10.29$; $SD = 5.17$); $t(25) = .674$, $p = .51$ (two-tailed). The magnitude of the

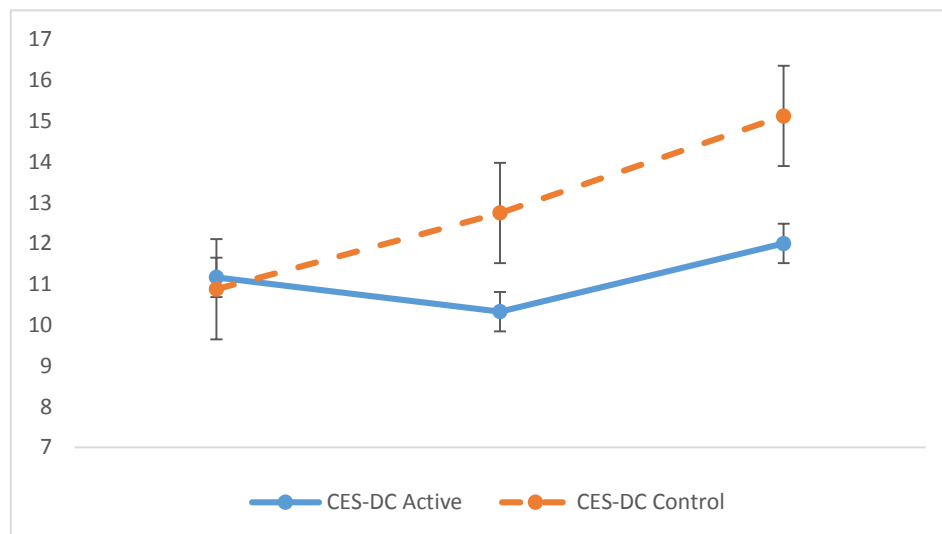
differences in the means (mean difference = 1.56, CI: -3.21 to 6.33) was very small (eta squared = .02). At T2, active condition ($M = 11.30$, $SD = 4.90$) and control condition ($M = 13.23$, $SD = 7.84$); $t(21) = -.681$, $p = .50$ (two-tailed). The magnitude of the differences in the means (mean difference = -1.93, CI: -7.82 to 3.97) was very small (eta squared = .02).

Two paired-samples t-tests were conducted to evaluate the impact of the CBC intervention on participants' CES-DC scores. We did not achieve a statistically significant decrease in depressive symptoms among active condition participants from T1 ($M = 13.70$, $SD = 5.77$) to T2 ($M = 11.30$, $SD = 4.90$), $t(9) = 2.11$, $p = .064$ (two-tailed), but those participants fared noticeably better than control group counterparts from T1 ($M = 9.92$, $SD = 5.19$) to T2 ($M = 13.23$, $SD = 7.84$), $t(12) = -1.73$, $p = .109$. The mean decrease in CES-DC scores for intervention group participants was 2.40 with a 95% confidence interval ranging from -.17 to 4.97. The control group reported an increase in depressive symptoms over the same period of -3.31, with a 95% confidence interval ranging from -7.48 to .86. Also, the eta squared statistic (.33) indicated a large effect size, suggesting that assignment to the active condition may account for the change in depressive symptoms among this group over time. For control participants, the eta squared statistic (.20) also indicated a large effect size, but smaller than that seen for active condition participants.

A split plot ANOVA analysis was then conducted to examine participants' scores at T1, T2, and T3. Initial analyses showed that the relevant assumptions were not violated. There was no significant interaction between assignment to the two conditions and scores at each of the three data gathering points, Wilks' Lambda = .88,

$F(2, 11) = .74, p = .50$, partial eta squared = .12. These results indicated that no noteworthy differences were found between the two participant groups at T1, T2, and T3. Figure 18.4 shows the estimated marginal means of the active and control condition participants on depressive symptoms scores from T1 to T2 to T3.

Figure 18.4: Depressive Symptoms and interaction effect from T1 to T2 to T3



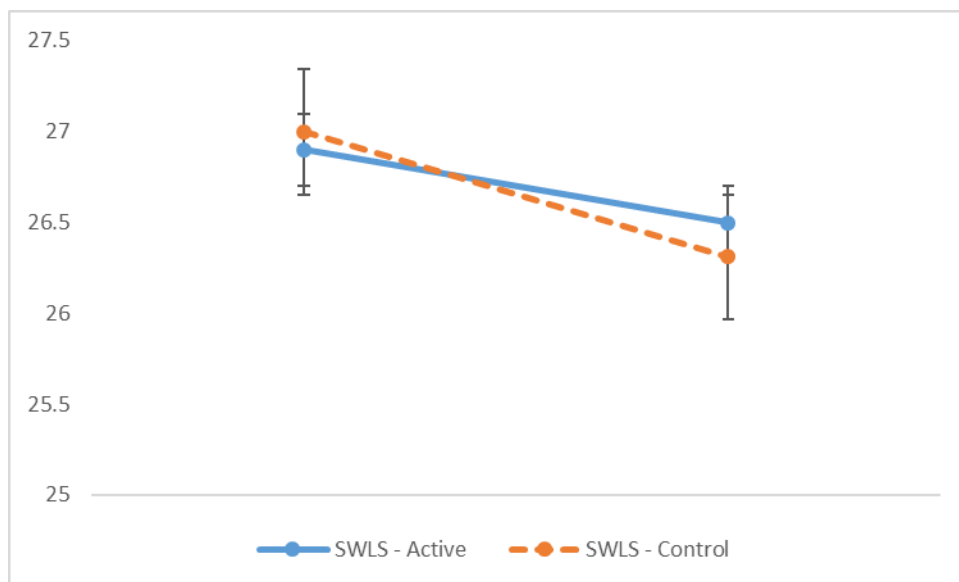
In seeking to account for the loss of significance over time when looking at results from T1 to T2 to T3, it should be noted that one of the relevant points here is that drop-off among participants appeared to influence the results. Several participants present at both data gathering moments when analysing T1 to T2 scores were not present at T3, and so their scores were excluded from the analysis when looking at T1 to T2 to T3 scores.

Life Satisfaction

A split plot ANOVA was run with a view towards detecting if there were differences over time reported by active and control group participants. Initial analysis showed that the data did not violate the assumption of homogeneity of variances. There was

no significant interaction between assignment to the two conditions and scores at baseline and immediate post-test, Wilks' Lambda = .997, $F(1, 21) = .07$, $p = .80$, partial eta squared = .003. The main effect comparing the two conditions was not significant $F(1, 21) = .001$, $p = .98$, partial eta squared = <.0005. These results indicate no noteworthy differences were found between the two participant groups at T1 and T2. Figure 18.5 shows the estimated marginal means of the active and control condition participants on SWLS scores from T1 to T2.

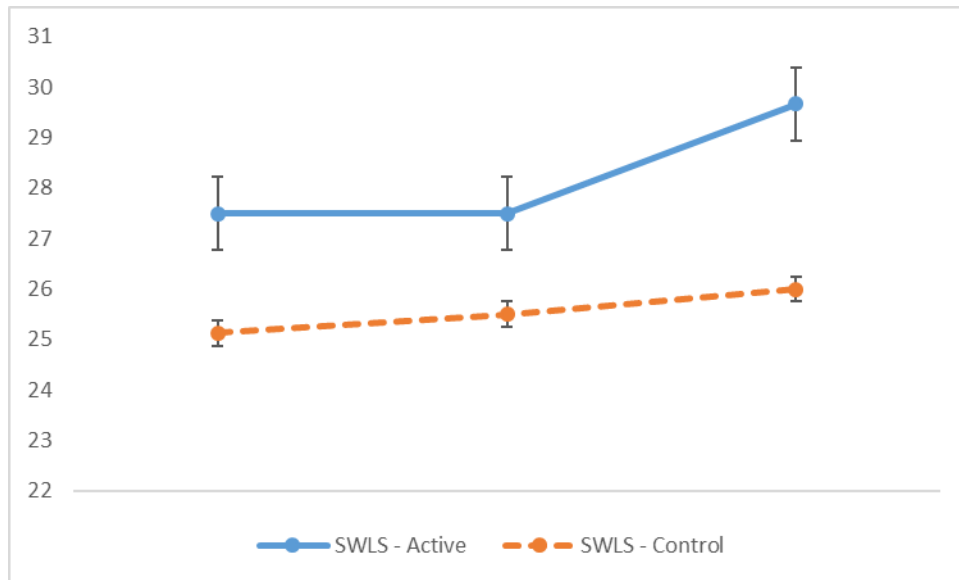
Figure 18.5: Life Satisfaction and interaction effects from T1 to T2



The same process was followed to assess participants' scores at T1, T2, and T3. Initial analyses showed that the relevant assumptions were not violated. There was no significant interaction between assignment to the two conditions and scores at the three data gathering points, Wilks' Lambda = .89, $F(2, 11) = .70$, $p = .52$, partial eta squared = .11. These results indicate no noteworthy differences were found between the two participant groups when looked at from T1 to T2 to T3. Figure 18.6 shows the

estimated marginal means of the active and control condition participants on SWLS scores from T1 to T2 to T3.

Figure 18.6: Life Satisfaction and interaction effects from T1 to T2 to T3



18.3 Analysis by depression caseness

The above sequence of analyses was repeated for depressive symptoms by caseness, as opposed to using total scores. Transforming depressive symptoms into a categorical variable (0 = not depressed; 1 = depressed) necessitated using a different statistical technique, as the approach described above is only appropriate when working with continuous dependent variables. Instead of conducting split plot ANOVA analyses, a chi-square test of independence was run for caseness at T1 and T2 and also at T1, T2, and T3, with a view towards assessing whether there was an association between caseness and assignment to the CBC and control conditions.

From T1 to T2, 23 of the 27 participants were included. From T1 to T2 to T3, a further nine participants were excluded, due to not providing data, meaning that 14 were included in that analysis.

T1 to T2: Using Yates Continuity Correction, no significant association was found between depression caseness and assignment to the active and control conditions. At T1, $X^2(1, n = 23) = .17, p = .68, \phi = -.18$. At T2: $X^2(1, n = 23) = .00, p = 1.00, \phi = .09$.

This finding did not reflect the significant interaction found between CES-DC total scores and assignment to the two conditions, outlined earlier. However, the results indicated that the percentage of depressed participants among active condition participants fell from T1 to T2 (from 40% to 30%), while the corresponding figure increased among control participants (from 23.1% to 38.5%), though both groups were relatively small in size (10 in the active group, 13 in the control group).

T1 to T2 to T3: Using Yates Continuity Correction, no significant association was found between depression caseness and assignment to the active and control conditions. At T1, $X^2(1, n = 14) = .07, p = .80, \phi = .23$. At T2, $X^2(1, n = 14) = .07, p = .80, \phi = .23$. At T3, $X^2(1, n = 14) = .00, p = 1.00, \phi = .10$.

Caseness figures were identical for the active group across the three time points – with 16.7% of participants depressed, though this amounted to one out of six individuals. For the control group, 37.5% (three participants) were depressed at T1 and T2, with this figure falling to 25% (two participants) at T3.

19. SUMMARY (STUDY 2: COGNITIVE-BEHAVIOURAL INTERVENTION)

The aim of this research was to assess the efficacy of a short CBC intervention in enhancing well-being (operationalised as subjective happiness, life satisfaction, and depressive symptoms) among an adolescent male Irish population in a school setting.

The split plot ANOVA analysis revealed no significant interaction effect between active and control group participants for subjective happiness and life satisfaction following the intervention. However, this analysis revealed a significant interaction between depressive symptoms and assignment to the two conditions from T1 to T2 (Wilks Lambda = .79 and partial eta squared = .21).

The next step in the analysis was to attempt to account for the significant interaction detected, and, with that in mind, independent samples t-tests and paired samples t-tests were conducted on CES-DC scores.

The independent samples t-test revealed no statistically significant difference in the scores, but the paired-samples t-test demonstrated that active condition participants saw their depressive symptoms scores decrease noticeably, but not to a statistically significant level, in relation to control group counterparts. The mean reduction for active condition participants was 2.40 points, while control group participants CES-DC scores increased on average by -3.31. The mean CES-DC score for CBC programme participants was 13.70 at T1 and 11.30 at T2, while the corresponding figures for control group participants were 9.92 (T1) and 13.23 (T2). We also found an eta squared figure of .31 which indicated a large effect size.

These findings were not borne out in a subsequent analysis of depression by caseness. However, chi-square analysis showed that the number of depressed active condition participants decreased from T1 to T2, while the number of depressed control group participants increased.

20. METHOD (STUDY 3: MINDFULNESS INTERVENTION)

The method section will be divided into six subsections. The first of these subsections will describe the relevant characteristics of the study participants. The second will provide information on the psychometric scales used in this study, including the SHS, the CES-DC, and the SWLS. The third subsection will offer information on the nature of the intervention programme. The fourth will detail what other materials were used in the conduct of this study. The fifth will outline the procedure through which the data were collected, while the sixth subsection will discuss the statistical analyses applied to the data post-collection.

20.1 Participants

Thirty participants were recruited for this study. The modal age range among the sample was 15-17 years. The participant group was drawn from TY students in an all-female school in County Cork, Republic of Ireland. All 30 participants were present for the pre-test questionnaires (T1), 28 of the overall group were present at post-test (T2), and 27 were present for the later follow-up questionnaires (T3).

20.2 Psychometric Scales

Well-being was operationalised using three questionnaires. Each questionnaire was chosen based on its suitability for an adolescent sample, and also because these same questionnaires were used in the survey which preceded this study.

Subjective Happiness: Subjective happiness was measured using the SHS (Lyubomirsky & Lepper, 1999). Information on the content of this scale, as well as reliability and validity, is contained in Section 11.2.

The current study obtained a Cronbach's alpha score of .82 at T1, .85 at T2, and .78 at T3.

Depression: Symptoms of depression were measured using the CES-DC (Weissman, Orvaschel, & Padian, 1980). Information on the content of this scale, as well as reliability and validity, is contained in Section 11.2.

The Cronbach's alpha in this study was .91 at T1, .90 at T2, and .90 at T3.

Life Satisfaction: Life satisfaction was assessed using the SWLS (Diener, Emmons, et al., 1985). Information on the content of this scale, as well as reliability and validity, is contained in Section 11.2.

The Cronbach's alpha in this study was .81 at T1, .84 at T2, and .87 at T3.

20.3 Mindfulness-Based Intervention Programme

The in-class intervention programme was led by a qualified MBSR Mindfulness practitioner. The four 40-minute sessions were informed by MBSR, and modified for an adolescent group, while also taking into account the relatively limited time window available for each session (a single class period). Each session sought to encourage active condition participants to engage in the moment-to-moment, non-judgemental awareness that characterises this approach to mindfulness practice. Meditation, body scanning, mindful breathing, mindful movement, and mindful eating all formed part of the four-week programme, as well as written exercises designed to facilitate

increased, non-judgemental self-awareness in each individual, with a view towards reducing stress and enhancing well-being.

20.4 Other Materials

In addition to the instruments described above, other materials were also used. These instruments were identical to those described in Section 16.4. See Appendix 10, 11, 16, and 17 for the relevant consent and information forms.

20.5 Procedure

Several school visits took place in conjunction with this study. These visits followed the same sequence as set out in Section 16.5.

When consent forms were returned to the schools by class members who were interested and had been given permission by a parent/guardian to participate, a time was scheduled for the pre-test questionnaires to be conducted. A single class period was assigned to conduct this element of the study in early January 2013. At the conclusion of this data gathering visit, participants were randomly assigned to either the active condition (receiving the programme) or the control condition (no intervention). Each participant was assigned a number from 1 to 30, and even numbers were assigned to the programme. Therefore, 15 participants were assigned to the mindfulness programme and 15 to the control group.

The four mindfulness sessions took place in the school on a weekly basis during January and February 2013. One school period was allocated to each session – 40 minutes. After the final session, on the same day, all participants present were brought

together again to complete the post-test questionnaires. Upon consultation with the relevant personnel in the school, it was agreed to gather T3 data in November 2013. Three participants were not available on the day, but in light of the students' increasing workload and other obligations, this was suggested as the best opportunity to return to the school for data gathering purposes.

20.6 Statistical Analyses

20.6.1 Descriptive results

The analysis of the data commenced with the application of descriptive statistical techniques. This yielded medians and mean scores, as well as standard deviations for each continuous variable (e.g., depressive symptoms), while also offering percentages for categorical variables (e.g., ethnicity).

20.6.2 Inferential analysis

The inferential analyses were conducted on similar lines to those described in Section 16.6.2. Whereas with the CBC intervention separate split plot ANOVAs were conducted on data from T1 to T2 and from T1 to T2 to T3 (due to participant drop-out rates by T3), here we proceeded directly to the 2x3 analysis. Where significant results emerged, post-hoc analyses were conducted.

20.6.3 Analysis by caseness for depressive symptoms

A separate analysis was conducted for depressive symptoms. As well as using a split plot ANOVA for CES-DC total scores, a chi-square test for independence was also conducted for depression caseness, with a view towards assessing whether there was an association between caseness and assignment to the two conditions over time.

21. ETHICS (STUDY 3: MINDFULNESS INTERVENTION)

The ethical considerations and provisions for Study 3 were identical to those of the previous studies. For further details, see Section 12.

22. RESULTS (STUDY 3: MINDFULNESS INTERVENTION)

22.1 Descriptive Results

With regard to demographic factors, the school which hosted the intervention was single-sex, therefore all 30 participants at T1 were female. At baseline, participants ranged in age from 15 to 17 years, with a median of 16, and a mean of 15.8. With regard to ethnicity, all 30 (100%) participants identified themselves as being ‘white or white Irish’.

Table 22.1: Descriptive Statistics for continuous variables

	Min	Max	Mean	Median	Std. Dev.
SHS - Mind (T1)	9.00	25.00	19.20	22.00	5.80
SHS – Ctrl (T1)	18.00	24.00	20.33	20.00	1.50
SHS – Mind (T2)	8.00	26.00	20.77	23.00	5.21
SHS – Ctrl (T2)	18.00	23.00	20.73	21.00	1.44
SHS – Mind (T3)	11.00	24.00	19.80	22.00	3.99
SHS – Ctrl (T3)	18.00	24.00	20.33	20.50	1.83
CES-DC - Mind (T1)	3.00	49.00	23.73	22.00	14.35
CES-DC – Ctrl (T1)	7.00	34.00	17.73	17.00	7.44
CES-DC – Mind (T2)	6.00	38.00	18.00	12.00	11.81
CES-DC – Ctrl (T2)	6.00	34.00	18.33	18.00	8.89
CES-DC - Mind (T3)	4.00	48.00	21.00	20.00	12.02
CES-DC – Ctrl (T3)	8.00	33.00	17.58	16.50	8.82
SWLS – Mind (T1)	12.00	33.00	24.13	27.00	6.85
SWLS – Ctrl (T1)	16.00	32.00	26.33	28.00	4.20
SWLS - Mind (T2)	14.00	31.00	25.00	26.00	5.44
SWLS – Ctrl (T2)	16.00	35.00	27.13	29.00	4.58
SWLS – Mind (T3)	14.00	31.00	25.27	28.00	6.18
SWLS - Ctrl (T3)	14.00	34.00	27.50	29.50	5.25

Table 22.1 shows the minimum, maximum, mean, median, and standard deviation values for the three well-being-related variables at each of the three data collection moments – baseline, immediate post-test, and follow-up. See Appendix 18 for histograms detailing the distribution of scores for each variable.

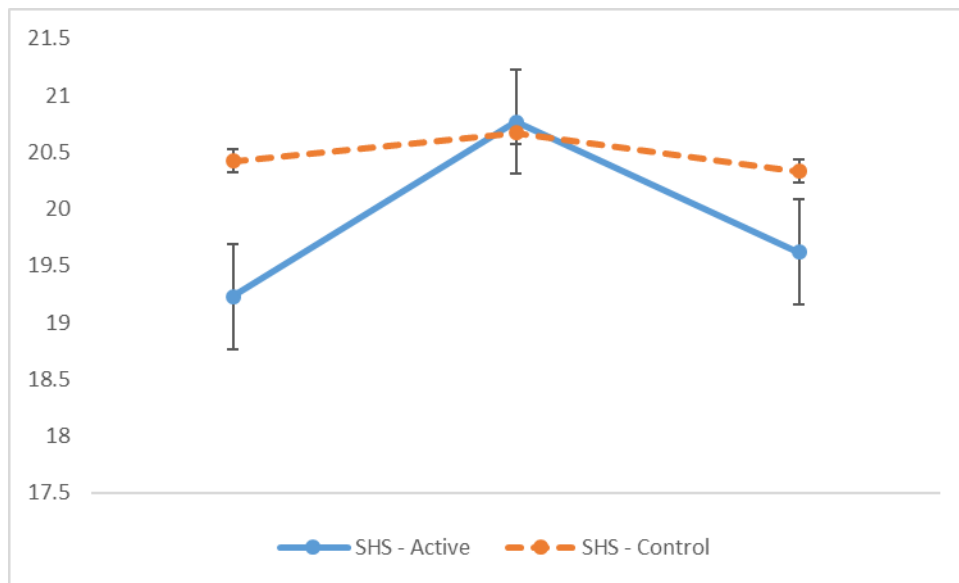
22.2 Inferential Analysis

In this section of the report, results of analyses on how the DV scores reported by active and control condition participants varied over time – from T1 to T2 to T3 – are presented. As an interaction effect over time was being assessed, split-plot ANOVAs were used, with a view towards detecting whether or not there were differences in reported levels of subjective happiness, life satisfaction, and depressive symptoms between active and control group participants at T2 and T3. The results will be presented in sequence, according to DV.

Subjective Happiness

A split plot ANOVA was run with a view towards detecting if there were differences over time from T1 to T2 to T3 reported by active and control group participants, and from there assessing the impact of the mindfulness intervention programme. Initial analysis showed that the data violated the assumption of homogeneity of variances, with the Levene's test reporting a significance value of less than 0.5 for SHS scores at T1, thereby raising questions about the validity of the model's results; however, as there is no non-parametric equivalent technique for this procedure, we proceeded with the analysis. There was no significant interaction between assignment to the two conditions and scores at the three data gathering points, Wilks' Lambda = .91, $F(2, 22) = 1.04$, $p = .37$, partial eta squared = .08. These results indicate no noteworthy differences were found between the two participant groups when looked at from T1 to T2 to T3. Figure 22.1 shows the estimated marginal means of the active and control condition participants on subjective happiness scores from T1 to T2 to T3.

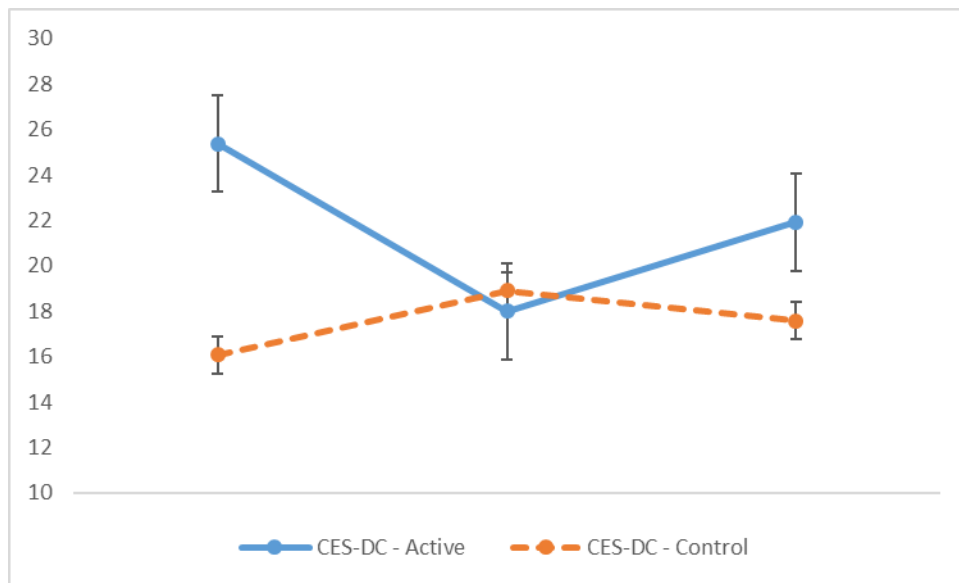
Figure 22.1: Subjective happiness and interaction effect from T1 to T2 to T3



Depressive Symptoms

A split plot ANOVA was run with a view towards detecting if there were differences over time from T1 to T2 to T3 reported by active and control group participants, and from there assessing the impact of the mindfulness intervention programme. Initial analyses showed that the relevant assumptions were not violated. There was a significant interaction between assignment to the two conditions and scores at each of the three data gathering points, Wilks' Lambda = .68, $F(2, 22) = 5.21$, $p = .014$, partial eta squared = .32. Figure 22.2 shows the estimated marginal means of the active and control condition participants on depressive symptoms scores at T1, T2, and T3.

Figure 22.2: Depressive Symptoms and interaction effect between T1, T2, and T3



Having found a significant interaction between depressive symptoms and assignment to the active condition or the control group when comparing participants' depressive symptoms scores over time, the next appropriate step was to conduct a post-hoc analysis, with a view towards detecting where the differences between the groups was to be found. Whereas with CBC, this meant running independent samples t-tests and paired samples t-tests, in this study, a different approach was necessary. Here, we only analyse T1 to T2 to T3 (having not had issues losing participants over time), meaning that a paired samples t-test was not appropriate. Instead, as well as running three independent samples t-tests, two one-way repeated measures ANOVAs were conducted, facilitating post-hoc analyses through the Bonferroni test.

In the first instance, independent samples t-tests examining the T1 to T2 to T3 scores were conducted. These tests revealed no significant statistical differences between active and control group participants for CES-DC scores at baseline, post-test, or follow-up. At T1: active condition ($M = 23.73$, $SD = 14.35$) and control condition (M

= 17.73; SD = 7.44); $t(28) = 1.44$, $p = .16$ (two-tailed). The magnitude of the differences in the means (mean difference = 6, CI: -2.55 to 14.55) was moderate (eta squared = .06). At T2: active condition ($M = 18$, $SD = 11.81$) and control condition ($M = 18.33$, $SD = 8.89$); $t(26) = -.09$, $p = .93$ (two-tailed). The magnitude of the differences in the means (mean difference = $-.33$, CI: -8.39 to 7.72) was very small (eta squared = .0003). For T3: active condition ($M = 21$, $SD = 12.02$) and control condition ($M = 17.58$, $SD = 8.82$); $t(25) = .82$, $p = .42$ (two-tailed).

Two one-way repeated measures ANOVAs were then conducted to look at the extent to which CES-DC scores changed among participants in the two conditions over time. A significant difference across time points for the mindfulness group was identified - Wilks lambda = .51, $F(2,11) = 5.22$, $p < .05$, with a large effect size, partial eta squared = .487. No such difference was found for the control group - Wilks lambda = .87, $F(2,10) = .78$, $p = .48$, while the effect size was just short of large, partial eta squared = .135.

Having found a significant interaction between depressive symptoms and assignment to the active condition or the control group when comparing participants' CES-DC scores from T1 to T2 to T3, the next appropriate step was to report on post-hoc tests, with a view towards detecting where the differences between the groups was to be found. These comparisons were conducted using the Bonferroni test, revealing a mean difference between mindfulness condition CES-DC scores of -7.385 from T1 to T2, with this difference statistically significant ($p < .05$). This suggests that assignment to the mindfulness condition contributed to statistically significant reductions in

depressive symptoms at post-test, but that these improvements were not retained over time.

Life Satisfaction

A split plot ANOVA was run with a view towards detecting if there were differences over time from T1 to T2 to T3 reported by active and control group participants, and from there assessing the impact of the mindfulness intervention programme. Initial analyses showed that the relevant assumptions were not violated. There was no significant interaction between assignment to the two conditions and scores at the three data gathering points, Wilks' Lambda = .97, $F(2, 21) = .33$, $p = .72$, partial eta squared = .03. These results indicate no noteworthy differences were found between the two groups when looked at from T1 to T2 to T3. Figure 22.3 shows the estimated marginal means of the active and control condition participants on life satisfaction scores from T1 to T2 to T3.

Figure 22.3: Life Satisfaction and interaction effect from T1 to T2 to T3



22.3 Analysis by depression caseness

The above sequence of analyses was repeated for depressive symptoms by caseness, as opposed using total scores. Transforming depressive symptoms into a categorical variable (0 = not depressed; 1 = depressed) necessitated using a different statistical technique, as the approach described above is only appropriate when working with continuous dependent variables. Instead of conducting split plot ANOVA analyses, a chi-square test of independence was run for caseness at T1, T2, and T3, with a view towards assessing whether there was an association between caseness and assignment to the mindfulness and control conditions.

Using Yates Continuity Correction, no significant association was found between depression caseness and assignment to the active and control conditions. At T1, $X^2(1, n = 25) = .33, p = .57, \phi = -.20$. At T2, $X^2(1, n = 25) = .04, p = .84, \phi = .12$. At T3, $X^2(1, n = 25) = .03, p = .86, \phi = -.12$.

This analysis did not replicate the corresponding split plot ANOVA, in which a significant interaction was found between depressive symptoms and assignment to the active and control conditions; however, the depression caseness figures echoed the pattern found in the earlier analysis for CES-DC scores. Among mindfulness participants, at T1, T2, and T3 respectively, 69.2% (nine), 46.2% (six) and 61.5% (eight) were depressed. The corresponding figures for control condition participants were: 50% (six), 58.3% (seven), and 50% (six).

23. SUMMARY (STUDY 3: MINDFULNESS INTERVENTION)

The aim of this research was to assess the efficacy of a short mindfulness-based intervention in enhancing well-being (operationalised as high subjective happiness and life satisfaction, and low levels of depressive symptoms) among an adolescent female Irish population in a school setting.

The split plot ANOVA analysis offered interesting results which merited further statistical analysis. The purpose of running this test was to look for differences between the SHS, CES-DC, and SWLS scores provided by active and control group participants at T1, T2, and T3. No significant interaction effect was found for subjective happiness and life satisfaction following the mindfulness programme. Instead, it was found that both the active and control groups reported marginal increases in mean SHS and SWLS scores. However, the analysis revealed a significant interaction between time and assignment to the two conditions in relation to CES-DC scores (Wilks Lambda = .80 and partial eta squared = .20). We also saw a large main effect for allocation to the different conditions.

The next step in the analysis was to seek to account for the significant interaction detected, and, with a view towards doing so, independent samples t-tests and one-way repeated measures ANOVAs were conducted on the data relating to the mindfulness-based intervention and participant scores on the CES-DC.

The independent samples t-test revealed no statistically significant difference in the scores, but the one-way repeated measures ANOVAs and inspection of the Bonferroni test demonstrated that active condition participants saw their depressive symptoms

scores decrease to a statistically significant level from T1 to T2. The mean reduction for active condition participants was 7.39, while control group scores increased on average by -.60. The mean CES-DC score for mindfulness intervention participants was 25.38 at T1, 18.0 at T2, and 18.92 at T3, while the corresponding figures for control group participants were 16.08 (T1), 18.92 (T2), and 17.58 (T3). We also found an eta squared figure of .487 for time x allocation to the mindfulness condition, which indicated a large effect size.

These findings were not borne out in a subsequent analysis of depression by caseness. However, chi-square analysis showed that the numbers of depressed and non-depressed participants in each of the two conditions echoed the pattern found in the split plot ANOVA analysis.

24. METHOD (STUDY 4: GRATITUDE INTERVENTION)

The method section will be divided into six subsections. The first subsection will describe the relevant characteristics of the study participants. The second will provide information on the psychometric scales used in this study. These included the SHS, CES-DC, and the SWLS. The third subsection will offer information on the nature of the intervention programme. The fourth will detail what other materials were used in the conduct of this study. The fifth will outline the procedure through which the data were collected, while the sixth subsection will discuss the statistical analyses applied.

24.1 Participants

Thirty-one participants were recruited for this study. The modal age range among the sample was 15-16 years. The participant group was drawn from TY students in an all-female school in Macroom, County Cork, Republic of Ireland. All 31 participants were present for the pre-test questionnaires (T1), 29 of the overall group were present at post-test (T2), and 29 were also present for the later post-test questionnaires (T3).

24.2 Psychometric Scales

Well-being was operationalised using three questionnaires. Each questionnaire was chosen based on its suitability for an adolescent sample, and also because these same questionnaires were used in the survey which preceded this study.

Subjective Happiness: Subjective happiness was measured using the SHS

(Lyubomirsky & Lepper, 1999). Information on the content of this scale, as well as reliability and validity, is contained in Section 11.2.

The current study obtained a Cronbach's alpha score of .87 at T1, .88 at T2, and .89 at T3.

Depression: Symptoms of depression were measured using the CES-DC (Weissman, Orvaschel, & Padian, 1980). Information on the content of this scale, as well as reliability and validity, is contained in Section 11.2.

The Cronbach's alpha in this study was .94 at T1, .95 at T2, and .93 at T3.

Life Satisfaction: Life satisfaction was assessed using the SWLS (Diener, Emmons, et al., 1985). Information on the content of this scale, as well as reliability and validity, is contained in Section 11.2.

The Cronbach's alpha in this study was .91 at T1, .92 at T2, and .90 at T3.

24.3 Gratitude Intervention Programme

Active condition participants were presented with packs containing four individual sheets of paper – one for each week that the intervention was scheduled to run. Each sheet included the following written instructions: “There are many things in our lives, both large and small, that we might be grateful about. Think back over the past week and write down on the lines below up to five things in your life that you are grateful or thankful for.” Participants were encouraged to complete each weekly sheet at home on the same evening and bring them into school the next day for the weekly collection. See Appendix 19 for a sample sheet.

24.4 Other Materials

In addition to the instruments described above, other materials were also used. These instruments were identical to those described in Section 16.4. See Appendix 10, 11, 20, and 21 for the relevant information and consent forms.

24.5 Procedure

Several school visits took place in conjunction with this study. These visits followed the same sequence as set out in Section 16.5.

When consent forms were returned to the school by those class members who were interested and had been given permission by a parent/guardian to participate, a time was scheduled for pre-test questionnaires to be conducted. A single class period was assigned to conduct this element of the study in early January 2013. At the conclusion of this data gathering visit, participants were randomly assigned to either the active condition (receiving the intervention) or the control condition (no intervention). Each participant was assigned a number from 1 to 31, and even numbers were assigned to the intervention. Therefore, 15 participants were assigned to the intervention and 16 to the control group.

As indicated above, unlike with mindfulness and CBC, the gratitude intervention was not conducted in-class during school hours. Participants were asked to complete each weekly gratitude exercise on their own time and bring the relevant sheets into school with them for collection on each of four consecutive Tuesdays during the intervention period.

After collection of the fourth and final set of active participant gratitude logs, all participants present on the day were brought together again to complete the post-test questionnaires. Upon consultation with the relevant personnel in the school, it was agreed to gather T3 data in November 2013. Two participants were not present on the day, but in light of the students' increasing workload and other obligations, this was suggested as the best opportunity to return to the school for data gathering purposes.

24.6 Statistical Analyses

24.6.1 Descriptive

The analysis of the data commenced with the application of descriptive statistical techniques. This yielded medians and mean scores, as well as standard deviations for each continuous variable (e.g., depressive symptoms), while also offering percentages for categorical variables (e.g., ethnicity).

24.6.2 Inferential

The inferential analyses were conducted on identical lines to those described in Section 20.6.2.

24.6.3 Analysis by caseness for depressive symptoms

A separate analysis was conducted for depressive symptoms. As well as using a split plot ANOVA for CES-DC total scores, a chi-square test for independence was also conducted for depression caseness, with a view towards assessing whether there was an association between caseness and assignment to the two conditions over time.

25. ETHICS (STUDY 4: GRATITUDE INTERVENTION)

The ethical considerations and provisions for Study 4 were identical to those of the previous studies. For details, see Section 12.

26. RESULTS (STUDY 4: GRATITUDE INTERVENTION)

26.1 Descriptive Results

With regard to demographic factors, the school which hosted this intervention was single-sex, therefore all 31 participants at T1 were female. At baseline, participants ranged in age from 15 to 16 years, with a median of 16, and a mean age of 15.77.

With regard to ethnicity, 28 (90.3%) participants described themselves as being 'white or white Irish', 2 (6.5%) as being of 'any other white background', and 1 (3.2%) as 'any other Asian background'.

Table 26.1: Descriptive Statistics for continuous variables

	Min	Max	Mean	Median	Std. Dev
SHS – Grat (T1)	8.00	27.00	19.20	21.00	5.70
SHS – Ctrl (T1)	11.00	26.00	19.00	18.00	4.53
SHS - Grat (T2)	8.00	26.00	19.15	21.00	5.19
SHS – Ctrl (T2)	6.00	25.00	18.13	18.00	5.15
SHS - Grat (T3)	7.00	27.00	18.92	20.00	5.39
SHS – Ctrl (T3)	8.00	25.00	18.38	20.00	5.25
CES-DC - Grat (T1)	1.00	47.00	20.40	12.00	14.52
CES-DC – Ctrl (T1)	3.00	49.00	19.50	17.00	13.11
CES-DC – Grat (T2)	1.00	49.00	20.15	16.00	14.90
CES-DC - Ctrl (T2)	4.00	57.00	21.69	21.00	15.04
CES-DC - Grat (T3)	1.00	44.00	16.92	18.00	11.51
CES-DC – Ctrl (T3)	4.00	47.00	22.63	21.50	12.88
SWLS - Grat (T1)	15.00	34.00	24.60	27.00	7.20
SWLS – Ctrl (T1)	6.00	34.00	24.63	28.50	7.51
SWLS – Grat (T2)	11.00	34.00	25.08	27.00	7.69
SWLS – Ctrl (T2)	7.00	33.00	22.69	22.00	8.04
SWLS - Grat (T3)	10.00	32.00	25.15	27.00	7.84
SWLS - Ctrl (T3)	12.00	34.00	24.13	21.00	6.91

Table 26.1 shows the minimum, maximum, mean, median, and standard deviation values for the three well-being-related variables at each of the data gathering moments – baseline, immediate post-test, and follow-up. See Appendix 22 for histograms detailing the distribution of scores for each variable.

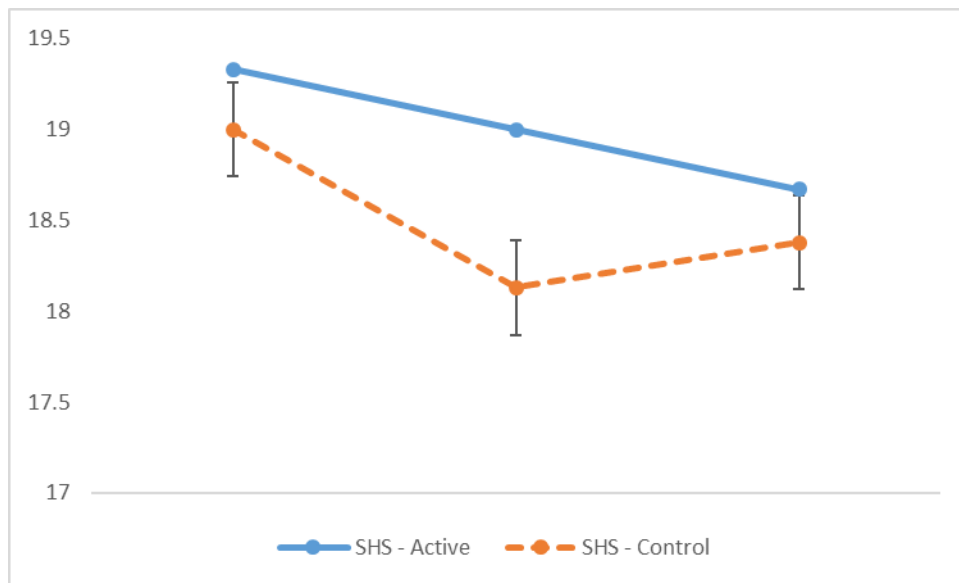
26.2 Inferential Analysis

In this section of the report, results of analyses on how the DV scores reported by active and control condition participants varied over time – from T1 to T2 to T3 – are presented. Split plot ANOVAs were conducted, with a view towards detecting interactions in reported levels of subjective happiness, life satisfaction, and depressive symptoms between active condition and control group participants over time.

Subjective Happiness

A split plot ANOVA was run with a view towards detecting if there were differences between the scores reported by active and control group participants at T1, T2, and T3, and from there assessing the impact of the Gratitude intervention. Initial analyses showed that the relevant assumptions were not violated. There was no significant interaction between assignment to the two conditions and scores at the three data gathering points, Wilks' Lambda = .98, $F(2, 25) = .30$, $p = .74$, partial eta squared = .02. The main effect comparing the two conditions was not significant $F(1, 26) = .070$, $p = .79$, partial eta squared = .003. These results indicate no noteworthy differences were found between the two participant groups when looked at from T1 to T2 to T3. Figure 26.1 shows the estimated marginal means of the active and control condition participants as it relates to SHS scores from T1 to T2 to T3.

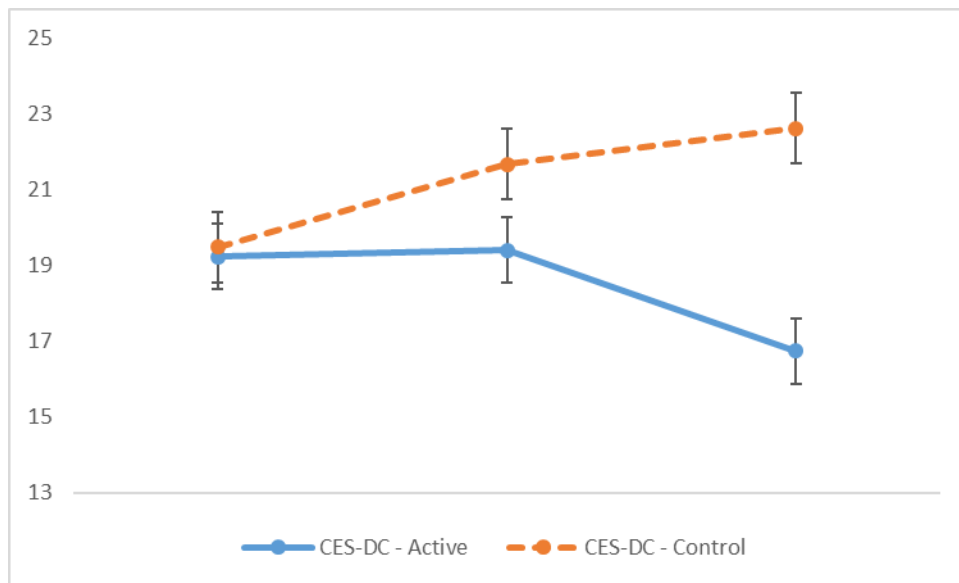
Figure 26.1: Subjective Happiness and interaction effect from T1 to T2 to T3



Depressive Symptoms

A split plot ANOVA analysis was conducted with a view towards detecting if there were differences between the scores reported by active and control group participants at T1, T2, and T3. Initial analyses showed that the relevant assumptions were not violated. There was no significant interaction between assignment to the two conditions and scores at the three data gathering points, Wilks' Lambda = .91, $F(2, 25) = 1.22$, $p = .31$, partial eta squared = .09. The main effect comparing the two conditions was not significant $F(1, 26) = .32$, $p = .58$, partial eta squared = .012. These results indicate no noteworthy differences were found between the two participant groups when looked at from T1 to T2 to T3. Figure 26.2 shows the estimated marginal means of the active and control condition participants on depressive symptoms scores over time.

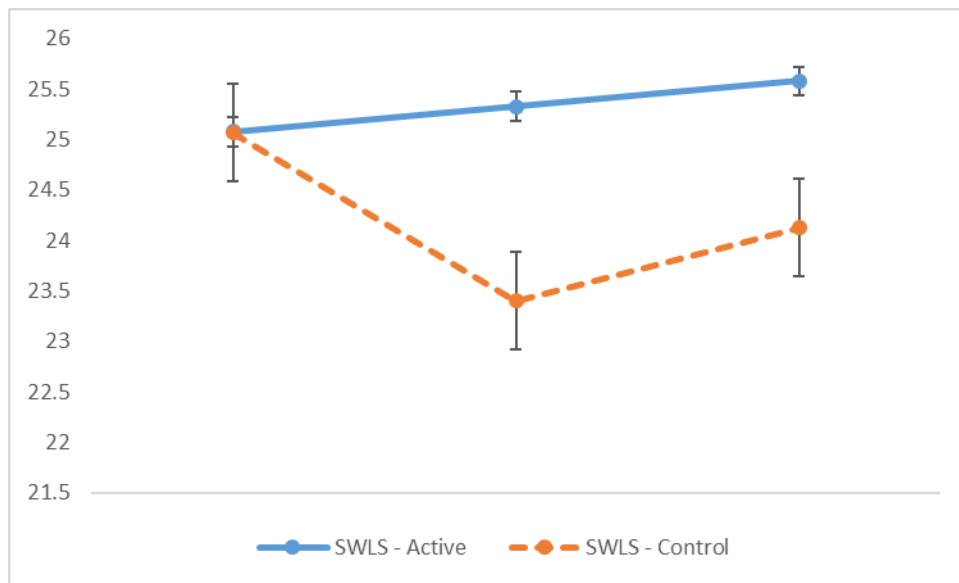
Figure 26.2: Depressive Symptoms and interaction effect from T1 to T2 to T3



Life Satisfaction

A split plot ANOVA analysis was conducted with a view towards detecting if there were differences between the scores reported by active and control group participants at T1, T2, and T3. Initial analyses showed that the relevant assumptions were not violated. There was no significant interaction between assignment to the two conditions and scores at the three data gathering points, Wilks' Lambda = .96, $F(2, 24) = .57$, $p = .57$, partial eta squared = .05. The main effect comparing the two conditions was not significant $F(1, 25) = .17$, $p = .68$, partial eta squared = .007. These results indicate no noteworthy differences were found between the two participant groups when looked at from T1 to T2 to T3. Figure 26.6 shows the estimated marginal means of the active and control condition participants on SWLS scores from T1 to T2 to T3.

Figure 26.6: Life Satisfaction and interaction effects from T1 to T2 to T3



26.3 Analysis by depression caseness

The above sequence of analyses was repeated for depressive symptoms by caseness, as opposed using total scores. Transforming depressive symptoms into a categorical variable (0 = not depressed; 1 = depressed) necessitated using a different statistical technique, as the approach described above is only appropriate when working with continuous dependent variables. Instead of conducting split plot ANOVA analyses, a chi-square test of independence was run for caseness at T1, T2, and T3, with a view towards assessing whether there was an association between caseness and assignment to the gratitude and control conditions.

Using Yates Continuity Correction, no significant association was found between depression caseness and assignment to the active and control conditions. At T1, $X^2(1, n = 28) = .15$, $p = .70$, $\phi = .14$. At T2, $X^2(1, n = 28) = .07$, $p = .78$, $\phi = .13$. At T3, $X^2(1, n = 28) = .38$, $p = .54$, $\phi = .19$.

This echoed the results of the corresponding split plot ANOVA, the results of which were detailed earlier.

27. SUMMARY (STUDY 4: GRATITUDE INTERVENTION)

The aim of this research was to assess the efficacy of a short gratitude intervention in enhancing well-being (operationalised as high subjective happiness and life satisfaction, and low levels of depressive symptoms) among an adolescent school-going female Irish population.

A series of mixed, split plot ANOVAs were conducted, with a view towards detecting differences between SHS, CES-DC, and SWLS scores provided by active and control group participants at T1, T2, and T3. No significant interaction effects or effects sizes were detected in any of the analyses. This was also the case in a chi-square analysis conducted to assess the relationship between depression caseness and assignment to the active or control conditions. In light of these findings, no further analyses were conducted on this dataset.

28. BASELINE SCHOOLS COMPARISON FOR DEPRESSION

With a view towards detecting if there were differences between the three intervention schools on depressive symptoms at baseline, a one-way between-groups ANOVA was conducted. There was a statistically significant difference at the $p < .05$ level in CES-DC scores among the three schools: $F(2, 85) = 6.65, p = .002$. The effect size, calculated, using eta squared, was .14, indicating a large effect. Post hoc comparisons using the Tukey HSD test indicated that the mean CES-DC score for the all-male school hosting the CBC intervention ($M = 11.04, SD = 5.95$) differed significantly from the all-female mindfulness school ($M = 20.73, SD = 11.64$) and the all-female gratitude school ($M = 19.94, SD = 13.58$), while the mindfulness and gratitude schools did not differ significantly from each other.

29. DISCUSSION

In this chapter, the results of analyses conducted arising from the initial survey and each of the three interventions will be presented in greater detail.

For the survey, results will be presented relating to each of the three DVs included in the analysis – subjective happiness, depressive symptoms, and life satisfaction – in terms of relationships detected with the various IVs - attributional style, optimism, self-efficacy, resilience, self-esteem, mindfulness, and gratitude. For the three follow-on interventions, results will be presented by each intervention programme - CBC, mindfulness, and gratitude. The three survey DVs were utilised as outcome variables in each of these subsequent studies. Following this, implications of the results, limitations of these studies, and possible future research directions will be discussed.

28.1 Initial Survey – Discussion of Results by DV

It should be noted in the first instance that mean scores were relatively high on all three DVs, indicating that participants self-reported positive levels of subjective happiness and life satisfaction, but combined this with tending to approach or exceed the recommended cut-off at which levels of depressive symptoms, as measured by the CES-DC, merit further assessment. In line with the guidelines set out by Cohen (1988), a statistically significant large positive correlation was found between SHS and SWLS scores, while there were significant large negative correlations between those variables and CES-DC scores. It appears unusual that participants tended to offer seemingly contradictory answers, suggesting that they were happy and satisfied with life while at the same time self-reporting relatively high levels of depressive symptoms. This finding is partly supported by research on the intensity of emotions

felt among younger people. Diener, Sandvik, and Larsen (1985) noted that prior research indicated that young people tend to score higher than older people on measures of positive and negative affect when both constructs are assessed separately, while Diener (1984) presented evidence to the effect that individuals who experience strong positive emotions are also likely to experience strong negative emotions. On a related point, Seligman (2002) suggested that males and females tend to report similar levels of happiness. However, he noted that this equivalence was achieved through females tending to be both happier and sadder than male counterparts, with higher levels of sadness tempering happiness among females, whereas males tend not to report relative extremes and instead rate themselves as being on more of an even keel. This tendency was not, however, reflected in these results, with male participants tending to score higher on subjective happiness and life satisfaction and lower on depressive symptoms.

Lyubomirsky and Lepper (1999) stated that adolescents tend to achieve healthy scores on the SHS, while Proctor et al. (2009) found that young people will self-report positive scores in measures of life satisfaction, but that these totals will tend to decline throughout adolescence. However, while findings such as these suggest that most adolescents are both happy and satisfied with life, at the same time it is widely reported that mental health problems are common among young people, e.g., Costello et al. (2011) reported that approximately 20% of adolescents throughout the world have a psychiatric disorder, while Lynch et al. (2006) reported similar figures for secondary school students 'at risk' for psychiatric disorders in Ireland. Cannon et al. (2013) reported even more stark findings relating to the mental health of young people in this country, indicating that by age 13, 33% of young people are likely to

have experienced a mental disorder, with this figure increasing to 50% by age 24. Also in Ireland, annual reports published by the National Suicide Research Foundation and the National Office of Suicide Prevention indicate that mental health problems are widespread among adolescents, as indicated by statistics on self-harming activities and suicide, respectively. However, at the same time, Ireland consistently ranks high in global happiness league tables, e.g., 18th in the most recent annual *World Happiness Report* (Helliwell, Layard, & Sachs, 2013), which, again, suggests a wider contradiction in terms of Irish society, one pointed towards by the findings in this survey.

Ultimately, it is not possible to explain this seeming contradiction definitively, but, as mentioned previously, Diener, Sandvik, et al.'s (1985) work on intensity of emotions among young people may offer a partial explanation. They found that females and young people in general (i.e., under 29 years) tend to be more emotionally intense, pointing to potential explanations grounded in biological considerations, younger people being more willing to acknowledge extremes of emotions, and possibly being exposed to more joy-inducing and also stressful life events and experiences.

29.1.1 Subjective Happiness & Life Satisfaction

It was predicted, arising from the review of the literature, that higher scores on self-reported measures of optimism, self-efficacy, resilience, self-esteem, mindfulness, and gratitude, and lower scores on the attributional style measure (indicating a positive attributional style) would be associated with higher levels of subjective happiness and life satisfaction, as measured by the SHS and SWLS respectively, while controlling for sex and personality.

Bivariate analyses supported these predictions for the DVs, with medium to large positive correlations found between both variables and the six IVs listed, indicating that higher scores on those IVs were positively related to higher scores on the SHS and SWLS. Medium to large negative correlations were found between subjective happiness and the three distinct dimensions of attributional style, as well as its overall composite score, with these results broadly echoed in the analysis for life satisfaction, in which negative correlations were found with two of the three distinct dimensions and composite of attributional style (with the exception being Internal\External). The negative correlations seen with attributional style were along the expected lines. As alluded to previously, in the Adolescent Cognitive Style Questionnaire (ACSQ), lower scores indicate a healthier pattern in attributing causes to life events.

For subjective happiness, three separate hierarchical multiple regression models were used – one each to assess the degree to which the five cognitive IVs (attributional style, self-esteem, resilience, self-efficacy, and optimism), mindfulness, and gratitude, respectively, predicted SHS results, while controlling in each instance for the influence of personality (extraversion and neuroticism) and sex. The control variables accounted for 42% of the variance in SHS scores, with this highlighting the role that sex and personality can play in influencing levels of happiness. The cognitive variables accounted for an additional 13% of the variance, with self-esteem and optimism reaching statistical significance, while in subsequent regression models, gratitude accounted for 7.1% and mindfulness 1.6%, with statistical significance reached in each instance. These findings were all consistent with existing literature highlighting the positive contribution that mindfulness (e.g., Huppert & Johnson, 2010; Keng et al., 2011), gratitude (e.g., Froh et al, 2008; Watkins et al., 2003), and

cognitive-related variables (e.g. Baumeister et al., 2003; Caprara et al, 2006; Forgeard & Seligman, 2012; Nevin et al, 2005; Tugade & Fredrickson, 2004), can make in impacting positively on well-being variables such as happiness. These findings also suggested that intervention strategies informed by such approaches might prove effective in enhancing subjective happiness among the target population. However, much of this research was correlational in nature, therefore it is important to be cautious as regards claims of causality. We will return to this point later in the discussion.

In the multivariate analysis for life satisfaction, three separate hierarchical multiple regression models were also used – with each, again, assessing the degree to which the five cognitive IVs, mindfulness, and gratitude predicted SWLS results, while controlling in each instance for the influence of personality (extraversion and neuroticism) and sex. The control variables accounted for 30.3% of the variance in SWLS scores. The cognitive variables accounted for an additional 25.6% of the variance, with self-esteem and optimism reaching statistical significance, while in subsequent regression models, gratitude accounted for 14.6% and mindfulness 3.2%, with statistical significance reached in each instance. These findings were all consistent with existing literature highlighting the positive contribution high levels of mindfulness (e.g., Keng et al, 2011), gratitude (e.g., N. Park et al., 2004) and cognitive-related variables (e.g., Birkeland et al, 2012; Cohn et al, 2009; Daukantaite & Bergman, 2005; Nevin et al., 2005; Vecchio et al, 2007) can make to an individual's sense of life satisfaction.

As with happiness, the findings relating to life satisfaction suggested that intervention strategies geared towards encouraging mindfulness and gratitude, and also working at a cognitive-behavioural level, might prove effective in enhancing life satisfaction among the target population. Again, as with happiness, the correlational nature of much of the research conducted in this area means it would be unwise to attempt to offer definitive answers on questions of causality.

29.1.2 Depressive Symptoms

It was predicted that lower scores on self-reported measures of optimism, self-efficacy, resilience, self-esteem, mindfulness, and gratitude, along with a negative attributional style would be associated with higher levels of depressive symptoms, while also controlling for sex and personality.

Bivariate analyses supported these predictions, with medium to large negative correlations found between depressive symptoms and six IVs listed above, indicating that lower scores on these variables were positively related to higher scores on the CES-DC. Also, medium to large positive correlations were found between depressive symptoms and two of the three distinct dimensions of attributional style (the exception being Internal/External attributions) and the overall composite total on this measure.

While the correlation between CES-DC scores and the Internal/External dimension on the ACSQ was noticeably lower than for other dimensions and the composite score, it was statistically significant. There was a difference in the strength of the correlation, but it can be argued that this difference does not violate the predictions on

attributional style. On this point, Cole et al. (2008) noted that while the helplessness model emphasises the tendency to attribute negative events to internal, stable, and global causes, the hopelessness model emphasises stability and globality, but not internality. In their own research on the relation between attributional style and depressive symptoms, Cole et al. highlighted that internality emerged as unrelated to stability and globality, with the latter two correlating strongly with each other. This highlights how different perspectives can view the internal/external dimension differently; however, in this research, while the stable and global dimensions correlated strongly with each other, the correlations seen between internality and the other two dimensions were of medium strength, and the correlation between internality and depressive symptoms was small-to-medium.

Three separate hierarchical multiple regression models were used – one each to assess the degree to which the five cognitive IVs, mindfulness, and gratitude predicted CES-DC results, while controlling in each instance for the influence of personality and sex. The control variables accounted for 44.6% of the variance in depressive symptoms. The cognitive variables accounted for an additional 13% of the variance, with self-esteem reaching statistical significance, while in subsequent regression models, gratitude accounted for 3.8% and mindfulness 2.5%, with statistical significance reached in each instance. These findings were consistent with existing literature pointing to the potential positive impact increasing levels of mindfulness (e.g., Hofmann et al., 2010) and gratitude (e.g., McCullough et al., 2004) can make on depressive symptoms, along with highlighting the relationship between a range of cognitive variables and depression (e.g., Baumeister et al., 2003; Caprara et al., 2010; Flett & Hewitt, 2013; Kim-Spoon et al., 2012; Patton et al., 2011).

Overall, the survey findings suggested that intervention strategies informed by cognitive-behavioural, gratitude, and mindfulness-based approaches may prove effective in enhancing SWB, as measured by the SHS and SWLS, and reducing levels of depressive symptoms among adolescents. The next step was to conduct those interventions with Transition Year groups.

29.2 Follow-up Intervention Studies – Discussion of Results by Intervention

In this section, we will discuss the findings of the three short intervention studies conducted as part of this research. As detailed previously, the impact of each intervention programme was assessed by having participants complete measures of subjective happiness, life satisfaction, and depressive symptoms at baseline, post-test, and approximately nine months later. The outcome variables in these studies were the DVs in the initial survey, and were measured using the same questionnaires, i.e., SHS, SWLS, and CES-DC.

29.2.1 Cognitive Behavioural Coaching

Arising from the findings of the initial survey, which suggested a relationship between subjective happiness, life satisfaction, depressive symptoms, and a range of cognitive variables, it was hypothesised that a cognitive-behavioural intervention would impact positively on these three outcome variables among an adolescent population.

As outlined in Section 15.2, consistent with this research being informed by a positive psychology perspective and the participant sample being drawn from a community-based as opposed to clinical setting, it was decided to use an intervention programme

in which the primary emphasis was on improving performance. With that in mind, a short group CBC programme was used in the all-male school which hosted this intervention. CBC has been described as CBT in a non-clinical setting (Neenan & Palmer, 2001), and therefore is a suitable choice for a universal intervention, in which no pre-screening takes place and the primary emphasis is on attempting to build strengths as opposed to identifying and/or repairing deficits.

In line with predictions, the CBC programme was found to be effective, albeit only in reducing depressive symptoms – with this effect seen at post-test, but not maintained over time. While the statistical analyses produced significant results in relation to this variable, with those who received the intervention programme faring better than control participants, no such findings were forthcoming for subjective happiness and life satisfaction. While comparisons between active condition and control participant conditions on SHS and SWLS scores did not reach significance, there was movement in the predicted direction to varying degrees, but not to the extent that was seen with depressive symptoms.

On results detected for depressive symptoms, looking at the CES-DC scores from T1 to T2 highlights the difference found between participants randomly assigned to the active and control conditions. Active condition participants moved from 13.70 to 11.30 (-2.40), while control participants saw CES-DC scores increase from 9.92 to 13.23 (+3.31), a net swing of 5.71 points on the 60-point scale. The partial eta squared value found for this analysis indicated a large effect size, as suggested by the Cohen (1988) guidelines, while the post hoc analysis showed that the CBC group fared better over time.

However, when reanalysed using caseness, as opposed to CES-DC total scores, no significant association was detected between depression and assignment to either the active or control condition from T1 to T2. Whereas the CES-DC mean dropped from T1 to T2 for active participants and increased for control participants, the caseness analysis showed the absolute numbers of depressed and non-depressed participants remaining the same from baseline to post-test. The caseness analysis revealed that just one of six eligible CBC condition participants was ranked as depressed at each measuring point, suggesting that making further headway was always going to be difficult.

While the statistical results offer support for the contention that the CBC intervention led to reductions in depressive symptoms among active condition participants, it is also necessary to attempt to explain what accounts for these results. Beck (e.g., 1967) highlighted that distorted patterns of thinking tend to be the root cause of depression. At the heart of his theory is the negative cognitive triad – a three-fold pattern of negative thoughts which, he maintained, could be found in sufferers of depression. This triad refers to thoughts relating to the self (worthlessness), the surrounding environment (believing the world to be unfair), and the future (hopelessness). Building on Beck's work, Burns (1980, 1989) introduced a formal categorisation of cognitive distortions that humans are vulnerable to and which can be detrimental to mental health, e.g., filtering, overgeneralisation, mind-reading, and catastrophising. These ideas feed strongly into notions of attributional style/explanatory style. Kim-Spoon et al. (2012) highlighted the mediating role that attributional style can play in the relationship between perceived competence and depressive symptoms among

adolescents. They reported that depressive attributional style was significantly predictive of depressive symptoms.

It is worth noting that one of the expressed objectives of the CBC intervention programme used here was to encourage participants to become aware of their own thinking styles. The area of cognitive distortions was addressed directly and active condition participants were exposed to examples designed to encourage them to reflect upon how their own explanatory style may be informed by tendencies towards these distortions. As highlighted by Seligman (2006), it is important for individuals to recognise that they engage in distorted, irrational patterns of cognition before they can seek to tackle them, through a process of disputing those distortions as they notice themselves experiencing them.

Cognitive-behavioural approaches in schools have been found to be effective in targeting symptoms of depression, and the findings in this study are consistent with that growing body of research. Brunwasser et al. (2009), in a meta-analysis on the effectiveness of the Penn Resiliency Program (PRP), examined 17 studies and reported significant mean effect sizes in a number of instances when comparing participants who received the PRP and no-intervention control groups on depressive symptoms at immediate post-intervention and over time. Horowitz and Garber (2006) conducted a meta-analysis on 30 studies designed to prevent the onset of depressive symptoms among children and adolescents, and found that universal approaches tend to be less effective both at immediate post-test and over time than selective and indicated approaches. However, while universal approaches were judged to be less effective, the authors did not suggest that they were ineffective. They reported mean

effect sizes of .12 for universal approaches at post-test and .02 over time, with the latter figure representing a very small effect size. That result was consistent with this research given that the significant finding on CES-DC scores was not sustained over time. As stated previously, this research was informed by a positive psychology perspective and therefore it was felt that a universal approach would be most appropriate, given that the emphasis was on enhancing overall well-being among adolescents in a non-clinical setting. This perspective also informs the Resourceful Adolescent Program – Adolescent (RAP-A) which, as set out by its developers (Shochet & Ham, 2004), is more concerned with the prevention of depression than its treatment. Using this programme among adolescents in Mauritius, Rivet-Duval et al. (2011) found that active condition participants reported less depressive symptoms than control participants at post-test, with an effect size of .32, but that the corresponding figure at follow-up was -.02, indicating, as in the current research, that the benefits were not maintained over time.

While significant reductions in depressive symptoms were not sustained, the fact that the CBC programme was seen to have been successful at immediate post-test is a key finding in this research. It has been established both in Ireland (e.g., Lynch et al., 2006) and internationally (e.g., Thapar et al., 2012) that mental health disorders are widespread among adolescents, with depression one of the conditions to which this group is most vulnerable. As well as causing distress at the time, mental health issues in adolescence can have long-term negative implications, with Jones (2013) highlighting that as many as half of mental disorders reported by adults can be traced back to this period. That underscores the importance of seeking to identify and deploy potentially useful preventative programmes in school settings. Based on the findings

in this study, CBC may be utilised successfully in this context, and merits further exploration in the future, with a view towards investigating whether or how the short-term positive effects on depressive symptoms detected here could be maintained over a longer period of time. A number of possibilities come to mind when considering this point. For example, schools could offer the programme once every term, effectively allowing students to ‘top-up’ the benefits which can accrue to them, the number of sessions could be expanded, and the length of individual sessions could be increased, from a single class period to double-periods.

While the post-test findings of significance are undoubtedly encouraging and point to the potential of CBC in an Irish context, we must also attempt to address why the positive results were not sustained at follow-up. The most obvious point to raise here is the time gap between T2 and T3 – approximately nine months. As made clear previously, this was a short programme, of four sessions conducted over four weeks. Given that backdrop, it may not have been realistic to expect the short-term benefits to be sustained over such a long period of time. The CBC programme attempted to target habitual thinking styles, which, by their very nature, become deep-seated over a period of years, and so a longer-lasting and/or more frequently-conducted intervention may be required when attempting to facilitate enduring changes in the ways that people think. While the programme was seen to be successful at T2, when considered against this backdrop it does not seem unusual that some slippage was seen by T3. These findings are consistent with those highlighted by Horowitz and Garber (2006). As mentioned earlier, they noted universal approaches tend to report slippage over time, with effect sizes shrinking noticeably from post-test to follow-up. Also, it should be noted that CES-DC baseline scores were not low in this study, with both

active and control participant mean scores approaching the recommended cut-off point at which depressive symptoms are deemed to merit further assessment. This suggests that participants may have been well placed to benefit from a short, focused, school-based intervention programme designed to tackle such symptoms. Had CES-DC scores been lower, it is conceivable that the same scope for short-term improvement may not have been present, and by the same token had scores far exceeded the cut-off, the CBC programme might have proven insufficient on its own, and may have needed to be deployed in tandem with or following a more overtly therapeutic approach. On the point of generalisability, while this programme was conducted as a universal intervention, given that depressive symptoms tended to approach the CES-DC recommended cut-off point, it may have been inadvertently selective, given that another population may not report symptoms at this level. However, this does not necessarily imply that the findings reported here are not representative, given that young people are regarded as being more vulnerable to depression than most age groups.

With regard to intervention programmes specifically billed as CBC, Madden et al. (2011) conducted a pilot study among male primary school students in Australia, in which 45-minute sessions were held fortnightly over a period of six months, ultimately finding that coaching interventions may be useful in school settings as mental health promotion programmes. While they looked at different outcome measures and conducted their programme across a longer period of time, a similar conclusion on the effectiveness of CBC could be drawn from this research, with the reduction in depressive symptoms a positive outcome, one that hints towards the

potential of such approaches in an Irish-setting, as it relates to adolescent mental health.

Similarly, Grant (2003) reported positive findings arising from a CBC programme conducted with 20 postgraduate students in Australia. Depression was one of the outcome variables in this study, with significant reductions reported, while improvements were also seen in other well-being-related variables, including quality of life, insight, and self-reflection. Comparing these results with those reported in this research highlights the shared finding on reducing symptoms of depression, but also points to the fact that significant increases in positive well-being-related variables were not forthcoming here, as will be discussed in detail shortly. When attempting to account for this, the longer duration of the programme may be a factor, while it should also be noted that the average age of participants in Grant's research was 36.5 years, so it is questionable to what extent we should expect these results to be echoed in a sample of mid-teenagers.

Green et al. (2007) oversaw what was billed as an evidence-based, cognitive-behavioural, solution-focused programme with 56 adolescent female high school students in Australia, in which participants were either assigned to the active condition or a wait-list control group. Statistically significant findings were reported on depression, anxiety, stress, hope, and cognitive hardiness, with active condition participants faring better across the board. Again, these findings echo those in the current research for depression, but Green et al. combined that result with significant findings on well-being-related variables. When considering why those results were not forthcoming in the current research, the most obvious differences between the two

approaches are that Green et al. conducted their research with an all-female sample, they received individual sessions (10 each), and the programme was run across two school terms.

When attempting to address the question of why CBC appeared to be more effective in reducing depressive symptoms than boosting subjective happiness or life satisfaction, looking at the emphasis of the programme may suggest an answer. As mentioned previously, coaching as a discipline prioritises the identification of thinking styles that reflect Beck's negative cognitive triad and the cognitive distortions formalised by Burns, but, noting that coaching takes place outside a therapeutic setting, coaches will sometimes refer to these as thinking errors (Palmer & Szymanska, 2010). This conscious emphasis can bring the identification of these errors to front-and-centre in a coaching programme, with this point true of the intervention conducted as part of this study. Participants in the active condition were exposed to material designed to highlight the human tendency to engage in thinking errors/cognitive distortions, with this awareness a vital prerequisite for developing the skills to dispute those thoughts, along the lines of the learned optimism strategies outlined by Seligman (2006), with a view towards cultivating more accurate, rational thinking styles. It is possible that, in facilitating a set of circumstances in which adolescents can become aware of their tendency to engage in automatic negative thinking, this may create a space within which depressive symptoms may be reduced. This decline in depressive symptoms may be associated with individuals coming to the internal understanding that a) these automatic negative thoughts are irrational and b) more realistic and advantageous thinking styles are available to them. One of the keys of coaching-based approaches is to empower individuals, to enable them to

effectively self-coach themselves on an ongoing basis. In this respect, participants take on a pro-active role in their experience of the CBC intervention, as opposed to being a passive receiver of information and ideas.

With regard to why subjective happiness and life satisfaction scores proved less amenable to movement in the predicted direction, this may relate to the relatively high baseline scores seen with both variables. Participants tended to report healthy levels of subjective happiness and life satisfaction at baseline, as measured by the SHS and SWLS respectively. Lyubomirsky (2007) stressed that average scores using the SHS tend range from 4.50 to 5.50 out of a possible 7, with school-based adolescents tending to fare well, averaging 5.13 in data gathered by Lyubomirsky and Lepper (1999) when reporting on the preliminary reliability and construct validation of the measure. In this study, means ranged from 5.05 to 5.82 across the two conditions. With regard to the SWLS, mean totals for participants ranged from 25 to 30 out of a possible 35, with this pattern of high scores among adolescents consistent with other findings reported elsewhere (e.g., Huebner et al., 2000; Nickerson & Nagle, 2004; and N. Park & Huebner, 2005). This being the case, it is possible that there was limited scope for substantial increases in scores on these variables. School-based cognitive-behavioural programmes in many instances are focused on tackling depression or, in the case of the PRP and RAP-A, preventing depression, and so variables such as happiness and life satisfaction will not necessarily be used as outcome measures in research work with this focus. In the current study, as well as reducing depression, the emphasis was also on increasing happiness and life satisfaction, and while significant results were achieved on the former, the outcome was less positive with the latter.

It may be that the short duration of the CBC programme can partially explain why we did not see the predicted outcomes on subjective happiness and life satisfaction. The programme ran for four weeks, but, as outlined previously, interventions designed to enhance well-being among school-based adolescents typically last longer. The PRP, which seeks to promote coping and problem-solving skills, is typically conducted over 12 sessions of 90 minutes duration. The RAP-A is designed to be delivered over 11 sessions of 45-50 minutes, and explicitly focuses on building resilience and enhancing strengths. While the length of each individual RAP-A session is similar to that seen with the CBC intervention delivered in this research, the overall programme extended over seven more weeks, with the PRP typically running for an additional week on top of that. Running short intervention programmes was a necessity in the current research, given that it was necessary to work within the window of availability offered by each participating school; however, given the typical length of cognitive-driven interventions, it is possible that a longer programme may have impacted more on SHS and SWLS scores, particularly given that baseline totals for each measure tended to be healthy and therefore there may have been a ceiling effect in place. However, with regard to working within the restrictions imposed by schools, this is unavoidable in 'real world' research. If a programme such as that used in the current research is to be further developed for use in schools, then these concerns will always be present. That being the case, the experience of running the programme in these circumstances is vital if we are to tailor such programmes for the reality of their conduct 'on the ground'.

On the point of baseline SHS and SWLS scores and the minor changes seen across the experimental condition over time, it is possible that individual happiness set-point

may also be a factor. Lykken and Tellegen (1996) proposed set-point theory, which suggests a genetic element in happiness, and from this they question to what extent individual happiness can be increased in the short-term and/or sustained over time. These authors suggest that up to 50% of the individual capacity to experience positive emotion may be determined by genetic influences and that over time – irrespective of major highs and lows in life – this is the point to which our level of happiness will tend to return. They pointed to research such as that conducted by Brickman et al. (1978) which suggested that people who have experienced an extreme high, in the form of a multi-million dollar lottery win, will tend to report elevated SWB in the short-term, but return towards their previous level of happiness over time. The same was found to be true for people who suffered serious physical injuries, with that extreme low impacting adversely on SWB in the short-term, but with these reductions largely made up over time. Diener et al. (1999) acknowledge this perspective, but caution against assuming that happiness is utterly bound with genetics, highlighting that the Lykken and Tellegen model also posits that the combined effect of volitional activity and life circumstances can be just as influential as that of genetics, also accounting for a combined 50%. Sheldon and Lyubomirsky (2007) emphasise the potential for volitional activity to impact on happiness, not rejecting Lykken and Tellegen, but suggesting that it might be more productive to think in terms of a set-range as opposed to set-point. They base this on the fact that the set-point equation itself also assigns 10% of the variance to life circumstances and, crucially, 40% to the activities people choose to undertake. Sheldon and Lyubomirsky note that if the genetics explanation accounts for individual happiness levels, then this would have negative implications for interventions geared towards boosting well-being, but if volitional activities are also a factor, then the things that people choose to do can also

exert an influence. This suggests that there may be limits to how much people can look to increase their general happiness level, but depending upon how we choose to spend our time, we can either boost happiness towards the upper end of any such range or see it flounder towards the lower end. Against this backdrop, set-point in of itself may offer a partial, but not full explanation for why subjective happiness and life satisfaction proved resistant to change in this study. Related to Sheldon and Lyubomirsky's view is Fredrickson's broaden-and-build theory (1998), which posits that the experience of positive emotions predicts more positive emotions in the future. This view has it that we can become happier in a sustainable way, but does not necessarily contradict set-point theory, in that while the latter emphasises the genetic element, the former is more concerned with volitional activities. However, considered against the backdrop of set-point theory, it may be that longer lasting interventions are better equipped to facilitate statistically significant changes in SWB-related variables such as subjective happiness and life satisfaction, particularly at immediate post-test.

Sheldon and Lyubomirsky (2007) also refer to the potential for volitional activities to facilitate movement towards an individual's highest happiness potential (i.e., to the maximum set range point), but that this can only be achieved while also guarding against hedonic adaptation. They present three key criteria that an activity designed to enhance SWB should meet in order to achieve these twin objectives – it must be enjoyable in itself, it must be presented in a variety of ways/settings, and it must be undertaken at times when the individual is eager to do so. It could be argued that the CBC intervention used in this study did not satisfy these three criteria, and that this may have contributed to hedonic adaptation by the measurement points, with this not adversely affecting depressive symptoms scores, but hindering significant increases

above baseline on subjective happiness and life satisfaction. Considered against the backdrop of Sheldon and Lyubomirsky's ideal scenario, it is unclear to what extent the active condition participants found the CBC programme interesting (and neither was their involvement strictly volitional, in that they consented to participate in the study, but they were not aware of the content prior to the sessions, and it unclear to what extent the participation of individuals may have been driven by a parent/guardian or an expectation on their part that the school 'wanted' them to become involved), the setting did not vary (each session was held in the same classroom and delivered in the same format), and it is impossible to state to what extent participants were eager to take part. Sheldon and Lyubomirsky's contention that an SWB activity will be at its most effective when an individual engages in it at the optimal time is not necessarily applicable to a group intervention, as it is possible that different times would suit the moods of different people, but no element of choice existed on this point, as each CBC session took place at a set time on the school weekly timetable. Based on the points made by Sheldon and Lyubomirsky, it is possible that had the sessions been conducted in a variety of settings and with more flexibility in terms of scheduling that this may have facilitated a different outcome on SHS and SWLS scores. As it is, it is possible that the intervention as conducted did not guard against the possibility for hedonic adaptation to whatever benefits may have accrued on those two measures and that this could account for results consistent with a ceiling effect.

Also, as mentioned previously, Fredrickson's (1998) broaden-and-build theory of positive emotions may be relevant here. Whereas set-point theory suggests in-built limits restrict the degree to which individual happiness can be altered, this theory

proposes that the experience of a wide variety of positive emotions can have the effect of broadening individual awareness, encouraging novel and varied forms of thought and action, and facilitating further increases in positive emotions, and also that the experience of these feelings can help undo the effects of lingering negative emotions. According to this theory, feeling positive emotions in the present is seen as predictive of feeling more positive emotions in the future. At first glance, the fact that subjective happiness and life satisfaction scores did not increase to the point of statistical significance here appears to go against broaden-and-build. That mean baseline scores were to varying degrees healthy should not have legislated against further increases, despite Froh et al.'s (2009) finding that lower baseline well-being scores are more amenable to improvement during an intervention programme and over time.

According to the broaden-and-build theory, the experience of positive emotions facilitates further increases in those same emotions, therefore the CBC intervention should have facilitated improved SHS and SWLS scores even among participants who reported healthy baseline scores. Happiness and life satisfaction did increase among intervention group participants, albeit not to a meaningful extent, with mostly small effect sizes (the exception being the analysis of SWLS scores from T1 to T2 to T3, which produced a large effect size for assignment to condition). It is possible that had the intervention programmes been conducted over more sessions and a longer period of time that these ratings may have increased further. Whether such gains would have been sustained over time is another matter, with set-point theory, as discussed previously, suggesting we tend to return to a general default level of happiness over time, while the broaden-and-build model would have it that experiencing positive emotions can create a context in which further positive emotions can be experienced. Sheldon and Lyubomirsky (2007)'s use of 'set-range' as being possibly a better

representation of the reality than ‘set-point’ suggests the theories can be compatible, with successful well-being intervention techniques perhaps facilitating movement to the upper end of an individual’s potential for happiness. However, while the accuracy of the set-point idea has been questioned (e.g., Headey, 2010), the findings reported for each of the interventions are more supportive of it than the broaden-and-build model, given the relative resistance to change seen on participants’ scores for subjective happiness and life satisfaction. With CBC, these findings were somewhat counterbalanced by the significant reductions seen in depressive symptoms.

29.2.2 Mindfulness

As with CBC, the mindfulness intervention programme was found to have made a statistically significant impact on depressive symptoms, but not on subjective happiness and life satisfaction ratings. Again, as with CBC, while statistical significance was not achieved, the comparisons between active and control condition scores show that the respective SHS and SWLS means tended to move in the hypothesised direction, albeit to a limited extent, with small effect sizes found for assignment to condition over time.

On depressive symptoms, significant findings were reported at post-test and over time, with active condition participants faring better relative to control participants from T1 to T2; and while active condition scores had increased again by T3, outcomes over the longer-term remained relatively positive for that group.

Mindfulness participants averaged 23.73 on the CES-DC at T1, falling to 18.00 at T2, and increasing to 21.00 at T3, and control participants scored 17.73 (T1), 18.33 (T2),

and 17.58 (T3). While the control participants self-reported lower levels of depressive symptoms throughout, there was more variability in the scores of active condition participants, with statistically significant reductions at T2, before drifting back towards, but not reaching, the earlier score by T3. The partial eta squared value in this analysis indicated a large effect size for experimental group assignment and time.

However, when reanalysed using casesness, as opposed to CES-DC total scores, no significant association was detected between depression and assignment to either the active or control condition from T1 to T2 to T3. That said, as with the CBC intervention, the scoring pattern was consistent with that found in the earlier analysis, with mindfulness condition participants tending to fare better relative to control group members up to T2, but less noticeably so by T3.

When attempting to account for this finding, it merits noting that one of the shared elements between the mindfulness programme and the CBC intervention reported on in the previous section is that participants were encouraged to varying degrees to become aware of their own thinking styles. This emphasis was more overt in the CBC intervention, during which the area of cognitive distortions was openly addressed, while, with the mindfulness intervention, informed as it was by an MBSR approach, the focus was on non-judgmental awareness of the individual's own body and thoughts. While this focus on awareness over judgment means that cognitive distortions were never directly addressed and targeted during the course of the intervention programme, that same emphasis on awareness creates a space in which individuals can recognise their own habitual thinking styles, and that awareness may

facilitate an insight into irrational tendencies, which, in turn, may lead to conscious efforts to modify those tendencies.

As suggested by the findings reported here, mindfulness techniques have also been found to produce beneficial results as it relates to depressive symptoms. Keng et al. (2011) stated that many studies have looked at the relationship between mindfulness and a number of psychological health-related variables, noting that significant negative correlations have been reported with depression. The same authors reported that interventions using MBSR have found reduced self-reported levels of depression among participants engaging in mindfulness practices. Zoogman et al. (2014) conducted what they billed as the first meta-analysis of mindfulness meditation with youth. They included 20 studies in their analysis and noted that the mean effect size for clinical populations was moderate, but almost three-times that seen for non-clinical samples, while they also found that higher effects were reported for psychological symptoms than for other DVs. Based on these findings, they suggested that mindfulness interventions for youth may be most effective when used with clinical samples and targeting symptoms of psychopathology. However, they acknowledged the need for caution, pointing to the fact that just 4 of the 20 studies analysed involved clinical samples. They also suggested that, consistent with the findings of the current study, mindfulness programmes with young people may be more effective in reducing negative symptoms than enhancing positive functioning. Elaborating on this, they pointed to how mindfulness emphasises less pathological uses of attention, targeting ruminative attention patterns. Whereas rumination is connected with negative self-focused attention, mindfulness emphasises non-judgemental experience of thoughts and sensations, e.g., not necessarily attributing

them to the self. Another relevant point made by Zoogman et al. is that in clinical samples more room for significant improvement may exist given the more severe baseline symptomatology. While the current research involved a non-clinical sample, as stated previously, the relatively high baseline CES-DC scores may have lent themselves to positive movement when exposed to the intervention programme.

Zoogman et al. (2014) also note that the strengthening of meta-cognitive and abstract thinking skills associated with adolescent cognitive development may leave young people well-placed to benefit from mindfulness interventions. On a related point, as noted in an earlier chapter, recent advances in brain imaging have facilitated breakthroughs in knowledge to the effect that while the brain usually reaches 90% of its adult size by the age of six, its various subcomponents undergo massive, wide-ranging changes up until around the age of 20 (Giedd, 2004). This, in turn, relates to neural plasticity, with Kadosh et al. (2013) and Konrad et al. (2013) highlighting the potential around targeting opportune developmental moments in adolescence for interventions geared towards changing brain-behaviour relationships in positive ways. Konrad et al. note the tendency among adolescents to be easily influenced by their own emotions, and how this has been implicated in patterns of risk-taking behaviour. However, they also stress that with the knowledge we now have on adolescent brain development, these same tendencies could be harnessed in a beneficial way, if learning experiences could be delivered in the context of a positive emotional environment. Based on the findings of the current research and existing literature, mindfulness programmes could play a valuable role in any such initiative.

While, as with CBC, the predicted outcome was not sustained over time, the decline was more marked in the mindfulness study. Despite this finding, it is still important, as mentioned above, to note that active participants' depressive symptoms scores tended to be lower at T3 than at T1, but that most of the gains seen at T2 were lost over the nine months between assessments. This indicates that the effects of the mindfulness programme were not sustained over time. Why this was the case merits some consideration. As indicated previously, the relatively short duration of the programme may have been a factor. While in this research, the mindfulness intervention ran over four weeks, most school-based programmes tend to be conducted over longer periods (e.g., Kuyken et al., 2013; Raes et al., 2013). This raises the possibility that a longer-lasting programme may have produced more durable benefits. Also, baseline CES-DC mean scores among active condition participants in this study far exceeded the recommended cut-off point at which further assessment is advised (23.73 versus 15). With relatively high scores at the outset, the active condition participants may have been well-placed to benefit from the programme, but longer-term reductions in depressive symptoms may have been sustained had the mindfulness intervention been delivered in tandem with a more overtly therapeutic approach.

However, while the positive findings on depressive symptoms were not sustained over time, this should not either distract or detract from the fact that the post-test findings of significance point to the potential for mindfulness-based approaches to impact positively upon negative symptoms among school-based adolescents in Ireland. Again, as pointed out when discussing similar findings arising from the CBC intervention, the mental health of young people is a global issue, and universal

approaches which offer preventative benefits could be extremely valuable in helping to tackle what Wittchen et al. (2011) described as the biggest health challenge facing Europe in the 21st century. In Ireland, reports by the National Suicide Research Foundation (e.g., 2013) and National Office of Suicide Prevention (e.g., 2013) consistently point to mental health-related problems being widespread among adolescents in Ireland. This being the case, school-based strategies with the potential to impact positively on depressive symptoms merit further investigation.

With regard to the other outcome variables, looking at subjective happiness scores from T1 to T2 to T3, active participants ultimately reported modest increases in SHS scores, while control participants reported a slight increase at T2, but returned to T1 levels by T3. The partial eta squared value in this analysis indicated a moderate effect size for assignment to the active condition over time, relative to the control group.

With life satisfaction, both active and control participants reported modest increases over time, but the partial eta squared value indicated a small effect size, indicating a similar pattern as that seen with SHS scores.

Comparing the findings in this research to previous literature, Broderick and Metz's (2009) evaluation of the BREATHE curriculum (informed by MBSR) among school-based females in the United States reported decreases in negative well-being-related variables (e.g., negative affect and tiredness) and increases in positive well-being-related variables (e.g., relaxation, self-acceptance, and emotional awareness). The key contrast here is that Broderick and Metz reported desired outcomes among both positive and negative-leaning variables, whereas in the current study statistically

significant results were only detected for depressive symptoms. This programme was delivered across six sessions, as opposed to four weeks for the current study. While 120 students received the MBSR-influenced curriculum, the control group consisted of just 17 students; also, the active group was made up of senior year students (mean age = 17.43), while control group members were described as juniors (mean age = 16.41). The authors acknowledged the limitations associated with using juniors as the control group, e.g., issues around maturation and specific stressors linked to senior year. In the current research, both active and control group members were drawn from the same school year, and therefore the issue of differing levels of year-related stress and maturation did not apply. Also, Broderick and Metz report that they collected data on just two occasions – baseline and post-test. Given the patterns over time seen in the current study, it is possible that the positive outcomes they reported may not have held up over time, a point acknowledged by the authors.

In a mindfulness trial undertaken with an all-male, school-based group, Huppert and Johnson (2010) failed to detect significant results, but found a positive association between the amount of individual practice engaged in outside the classroom and improved psychological well-being and mindfulness, and that improvements in well-being were related to two personality traits – agreeableness and stability. Huppert and Johnson's work was similar to the current study in that the mindfulness programme was informed by MBSR, and was delivered once weekly over a period of four weeks, with each session lasting 40 minutes. Another point of similarity was that control participants received no intervention for the duration of the programme, instead attending regularly scheduled classes. However, there were also many differences – this earlier work was conducted with an all-male group, post-intervention data was

only collected on one occasion, and different outcome variables were assessed, e.g., while mindfulness and personality were assessed in the initial survey undertaken as part of the current research, they were not measured as part of the follow-up intervention phase. In each of the three intervention studies undertaken as part of this research, participants completed measures of subjective happiness, life satisfaction, and depressive symptoms, with these outcome measures the same as the dependent variables used in the initial survey. A potential key difference which may have facilitated the positive results reported by Huppert and Johnson relates to home practice. Participants in the current research were encouraged to incorporate elements of the mindfulness techniques they were exposed to into their daily life, though it is not known to what extent that they did so. In Huppert and Johnson's study, participants were provided with audio files designed to help them with their mindfulness exercises outside the classroom, which may have encouraged participants to make more of an effort. As mentioned previously, while no statistically significant findings were reported by Huppert and Johnson, it was noted that a positive association was detected between practice outside the classroom and improved psychological well-being and mindfulness.

On the point of why we did not see statistically significant positive movement on SHS and SWLS scores, as pointed out previously, this may relate to the relatively high baseline scores seen on both variables. This being the case, the scope for upward movement may have been limited. Also, as detailed when discussing the CBC findings, the duration of the intervention programme and the length of individual sessions may also have been factors in the results. Each of the four mindfulness sessions took place across a single class period – 40 minutes. Compared to similar

programmes, the study undertaken here was not only short in terms of the total number of sessions, but also in the length of each session, e.g., Raes et al.'s (2013) school-based study included eight weekly sessions, each lasting 100 minutes. As previously stated, running short intervention programmes was a necessity in this research, with a view towards securing the co-operation of participating schools. As with CBC, it is possible that a longer programme may have impacted more on SHS and SWLS scores, particularly given that baseline totals for each measure tended to be healthy and therefore there may have been a ceiling effect in place. It is also possible that Sheldon and Lyubormirsky's (2007) criteria for SWB-enhancing activity to be effective may be relevant here. As detailed when discussing the CBC study findings, they propose that any such activity must be enjoyable in its own right, must be delivered in varied ways and settings, and must be engaged in when an individual is appropriately motivated, and that adhering to these three points guards against the possibility of hedonic adaptation and therefore creates a space in which an individual can work towards achieving their highest happiness potential. As with the CBC intervention, it could be argued that the mindfulness programme did not meet these criteria, in that we do not know to what extent participants found the intervention enjoyable, it took place in the same space and within the same broad format each week, and as it was a group activity assigned a time-slot in the school timetable, it is likely that not all active condition participants were in an amenable mood to benefit from any given session. However, despite this, significant findings were still reported on depressive symptoms, which points to the potential benefits associated with this approach.

Again, it is possible that the lack of statistically significant movement on SHS and SWLS scores may hint at a set-point effect. Lykken and Tellegen's (1996) theory and responses to it were outlined in the previous section. This theory proposes a strong genetic element behind individual capacity for experiencing happiness, and suggests that all individuals tend to reside at certain levels on happiness and will tend to return to this 'default' level, even after major life events. If accurate, this suggests that short intervention programmes may be unlikely to make a lasting impression on happiness and life satisfaction levels. However, as detailed previously, the broaden-and-build theory of positive emotions (Fredrickson, 1998) takes a different view, instead proposing that happiness, through the experience of positive emotions, is amenable to positive and lasting change.

29.2.3 Gratitude

Statistical analyses of the gratitude intervention did not offer any findings of significance. While the CBC and mindfulness interventions stopped short of significance on happiness and life satisfaction, the relative scores between active and control group participants tended to move in the desired direction; however, this pattern tended not to be echoed as obviously among gratitude intervention participants. As with the other two interventions, the most compelling results related to reductions in depressive symptoms, but whereas the CBC and mindfulness programmes reported significant findings on this outcome measure, the gratitude intervention did not.

Looking at subjective happiness scores from T1 to T2 to T3, active condition SHS scores declined slightly across time, while control group scores decreased and then

increased, though by less than the initial fall. In this analysis, the partial eta squared figure suggested a small effect size.

With life satisfaction, active condition participants fared slightly better over time, and control participant scores dipped slightly at T2, before recovering most of the lost ground at T3. Statistical analysis suggested a small, but approaching moderate, effect size relating to assignment to the two conditions over time.

With depressive symptoms, the trend from T1 to T2 to T3 was in the desired direction, with active condition CES-DC scores decreasing over time, while control participants' scores increased gradually throughout. Statistical analyses suggested a moderate effect size for assignment to the two conditions over time. However, it should be noted that while active participants appear to have fared better over time, all mean CES-DC scores in this study exceeded the recommended cut-off point of 15/60. This, again, raises questions on the impact of baseline scores on the likelihood of success in the three follow-up intervention studies. In this case, it may be that the presence of relatively high levels of depressive symptoms could have made participants resistant to the possible benefits of the gratitude intervention in the absence of any additional more overtly therapeutic elements. As discussed previously, universal well-being interventions may be at their most effective when conducted with groups among whom baseline scores on outcome variables are moderate, i.e., not so positive as to suggest a ceiling effect and not so negative as to imply a floor effect, with the latter perhaps necessitating a therapeutic intervention either prior to or running parallel with the well-being programme to lift participants up to a level whereby they could be better placed to benefit. As well as this, there can be high

attention to internal processing among individuals for whom depressive symptoms are prevalent (e.g., Beck, 1967) with this possibly hindering the process whereby a well-being intervention delivers its benefits. Perhaps militating against that suggestion in this instance is the fact that baseline CES-DC levels among active condition mindfulness participants were higher (23.73 versus 17.73), but a statistically significant reduction in depressive symptoms relative to control participants was achieved. However, it would perhaps be unwise to extrapolate too much from this, given that it would involve comparing different intervention programmes conducted among different population samples in different schools and different towns, albeit with both made up of mid-teen, school-based females. That said, one of the purposes of this research is to compare the efficacy of the various intervention programmes used, and when looked at in that context, the mindfulness intervention appears to have been more effective than the gratitude intervention, as was the CBC intervention programme. However, it could also be that the absence of findings of significance in this study may be owed to the counting blessings intervention, as implemented here, not being sufficiently robust as to facilitate significant improvements on the outcome variables.

In this study, the tendency was for active condition scores to move in the predicted direction, but not in all instances, and without statistically significant results. These findings are at variance with those of Emmons and McCullough (2003) who looked at counting blessings versus burdens in daily life and Froh et al. (2008) who conducted research into the effects of a counting blessings experiment among adolescents, with the specifics of these studies elaborated upon earlier in Chapter 6. There are a number of possible explanations for why the results here did not support those seen in earlier,

similar studies. For ethical and practical reasons, it was decided to opt for an active condition and a no-treatment control group, rather than including a counting hassles group. On the point of practicality, there were concerns over whether there would be sufficient numbers of participants to allocate to three separate conditions. On the point of ethics, it was decided not to use a counting hassles condition in light of the established vulnerability among adolescent females in particular towards depressive symptoms.

Also, as will be discussed in more detail in the limitations section, scheduling pressures in the school meant that it was not possible to incorporate the intervention into the weekly class timetable. Instead of being given time during the week to write up gratitude logs in a scheduled period, participants were asked to write their logs on their own time and bring them into school on a specified day each week for collection. This being the case, it is possible that some participants took the task more seriously than others, though it is not possible to estimate to what degree this may have been the case.

Also, gratitude interventions have used approaches other than counting blessings in seeking to impact positively on well-being among young people. As mentioned previously, Froh et al. (2009) asked adolescents to write gratitude letters, finding that participants with low positive affect benefited most over time, while Gander et al. (2013) found that gratitude visits increased happiness and decreased depression, and Seligman et al. (2005) reported that the Three Good Things intervention also impacted positively on happiness and depression.

Wood et al. (2007) reported that gratitude-based interventions have been successful in impacting positively upon well-being and symptoms of depression. They pointed out that individuals who feel more gratitude are more likely to report higher levels of happiness and lower levels of depressive symptoms. Also, Wood et al. (2010) maintain that the cross-sectional link between well-being and gratitude remains strong no matter how well-being is defined, while Peterson et al. (2007) highlight that gratitude is a predictor of life satisfaction. Whereas the counting blessings approach used here was not seen to be successful, the initial survey conducted as part of this research was consistent with earlier findings, in that it found that higher levels of gratitude were associated with greater subjective happiness and life satisfaction and lower levels of depressive symptoms.

As with the previous two studies discussed here, the duration of the intervention may have been a factor in why the predicted results did not come to pass. As detailed in Section 6.2, Emmons and McCullough (2003) conducted a study looking at the effects of a grateful outlook on psychological and physical well-being. This counting blessings experiment asked participants to write weekly reports for a period of 10 weeks, with the authors ultimately concluding that the approach was effective in increasing well-being, in that it was judged to have facilitated the building of psychological, social, and spiritual resources. The counting blessings intervention conducted in this research saw participants asked to maintain weekly gratitude logs for a period of four weeks, less than half the duration of the experiment conducted by Emmons and McCullough.

Froh et al. (2008) conducted a counting blessings intervention among school-based early adolescents. In this research, 221 participants were also assigned to three conditions. As with Emmons and McCullough (2003), gratitude and hassles were among the conditions, but where the earlier study had life events as the third condition, Froh et al. included a control group for comparison purposes. Participants kept daily logs for two weeks and were also assessed at three-week follow-up. Based on ratings of 25 affect items and self-reports on life satisfaction, physical symptoms, reactions to aid, and prosocial behaviour, it was found that gratitude condition participants fared better on well-being. A point of distinction between the current research and that conducted by Froh et al. was that items measuring affect were not included. It is common to include the assessment of such items when conducting an intervention of this type, but, as stated earlier, with a view towards comparing the efficacy of each of the three intervention studies conducted in this research, it was decided to use the same outcome measures across all groups, i.e., subjective happiness, life satisfaction, and depressive symptoms. Had additional items measuring affect been used in this study, it is possible that findings of note may have been reported, but based upon the results that were recorded, with no significant findings achieved over time based on assignment to either the experimental or control groups, it seems unlikely that this would have been the case.

Froh et al. (2009) conducted further research among 89 children and adolescents, in which they opted for two conditions, gratitude and control. They noted the relatively small number of participants as a factor in this decision. This Froh et al. two-week research (with later follow-ups) did not involve a counting blessings exercise, instead asking active condition participants to write a gratitude letter, while control

participants were instructed to write about their own lives. Froh et al. approached this study attempting to address a question which may be relevant to the current findings. They asked whether positive affect played a moderating role, and set this question against the backdrop of existing literature suggesting that gratitude conditions offered limited benefits over control conditions. Specifically, they asked whether people already high in positive affect may be less likely to experience gains in well-being during an intervention of this type, and also whether those with lower levels of positive affect may require exposure to more positive events before experiencing substantial gains. They ultimately found that participants low in positive affect at baseline derived the most benefit from the intervention programme over time. In terms of the current study, Froh et al.'s focus on how baseline levels of positive affect can influence outcomes again points to the possible key role played by the relatively high baseline scores across all three intervention studies on both subjective happiness and life satisfaction. Froh et al.'s findings suggest, at least as it relates to the gratitude intervention, that had the mean baseline scores on these two variables been lower that results more consistent with the predictions made may have been forthcoming.

Emmons and McCullough's (2003) findings on the potential benefits of actively seeking to cultivate gratitude – building psychological, social, and spiritual resources - evoke the broaden-and-build theory of positive emotions (Fredrickson, 1998). As it relates to the findings reported here, this theory may be relevant to the discussion on why none of the three intervention studies saw significant increases in subjective happiness or life satisfaction. Whereas set-point theory suggests in-built limits restrict the degree to which individual happiness can be altered, this theory proposes that the experience of a wide variety of positive emotions can have the effect of broadening

individual awareness, encouraging novel and varied forms of thought and action, and facilitating further increases in positive emotions, and also that the experience of these feelings can help undo the effects of lingering negative emotions. According to this theory, as referred to previously, feeling positive emotions in the present is seen as predictive of feeling more positive emotions in the future. At first glance, the fact that subjective happiness and life satisfaction scores did not increase to the point of statistical significance in the studies undertaken here appears to go against the broaden-and-build theory. That mean baseline scores were to varying degrees healthy should not have legislated against further increases, despite Froh et al.'s (2009) finding that lower baseline well-being scores are more amenable to improvement during an intervention programme and over time. However, active condition participants in this study tended to fare better than the control group on SHS and SWLS, albeit not to the point of statistical significance..

Against this backdrop, it is not necessarily the case that these findings are not consistent with the broaden-and-build model. Happiness and life satisfaction tended in the right direction, but the movement was not statistically significant. It is possible that had the intervention programmes been conducted over more sessions and a longer period of time that these ratings may have increased further. Whether such gains would have been sustained over time is another matter, with set-point theory, as discussed previously, suggesting we tend to return to a general default level of happiness over time. Ultimately, the findings of the three intervention studies conducted in this research appear more supportive of set-point than broaden-and-build, given the relative resistance to change seen on participants' scores for subjective happiness and life satisfaction. With the CBC and mindfulness studies

these findings were somewhat counterbalanced by the significant reductions seen in depressive symptoms, but in the gratitude study no such findings of significance were reported. That being the case, it may be that as it relates to the gratitude intervention, rather than indicating support for the ideas of one theory or another, the findings may indicate that the counting blessings intervention did not work as intended. As mentioned previously, the conduct of this study differed from the others in that participants did not complete their assigned tasks during school hours, instead completing their gratitude logs on their own time and presenting the logs for collection. This point may be key, in that it is impossible to know how many participants devoted time, thought, and effort to the exercise and how many rushed each weekly log. Had a class period been set aside in which participants were instructed to reflect upon the previous seven days before writing up each gratitude log, it is possible that we may have seen different results. At the very least, in that situation it would have been clear that each participant wrote their weekly logs against the backdrop of a similar atmosphere and environment. Instead, as it was, there can be no certainty around these points.

29.3 Implications

The findings of the initial survey and follow-up intervention studies that form this research point to potential benefits of short in-class interventions in impacting positively on symptoms of depression being experienced by school-going adolescents in Ireland. Two of the three interventions – CBC and mindfulness – appeared to make a substantial impact on reducing depressive symptoms among participants. This is a key finding, particularly when considered against the backdrop of a wide body of research indicating that mental health problems are common in adolescent years and

beyond. Costello et al. (2011) highlight that around one-in-five of adolescents throughout the world has a psychiatric disorder, Thapar et al. (2012) estimate a 4-5% prevalence rate for unipolar depression among adolescents, and Jones (2013) highlighted that up to half of mental disorders reported by adults can be traced back to adolescence, while in this research depressive symptoms in two of three intervention schools consistently exceeded the recommended CES-DC cut-off point, while the mean score among participants from the 13 schools that took part in the initial survey also exceeded the cut-off.

As well as reducing depressive symptoms, it was also hypothesised that the intervention studies would impact positively upon subjective happiness and life satisfaction, but analyses suggested that statistical significance was not reached for either variable in any of the three intervention programmes. Active condition participants tended to record improvements on both variables, but this movement tended to be modest, particularly when compared to scores for depressive symptoms. In line with Sheldon and Lyubomirsky's (2007) criteria for effective SWB-enhancing activities, it may be that the intervention programmes used here did not sufficiently guard against the effects of hedonic adaptation, and while this did not prevent two of the three studies reporting significant findings on depressive symptoms, it may be that this was a factor in why results for the overtly-positive-leaning outcome measures were not as encouraging. As reported, the happiness and life satisfaction scores assessed both during the initial survey and follow-on intervention phase tended to be healthy. These findings were in line with the general thrust of the existing literature, which maintains that individuals in a community setting will tend towards reporting happiness above neutral (e.g., Diener & Diener, 1996). As noted earlier in this

chapter, Lyubomirsky (2007) reported that SHS scores tend to average between 4.5 and 5.5, with 4.0 the cut-off point at which individuals are encouraged to complete a depression scale. Also, when reporting on the preliminary reliability and construct validity of the measure, Lyubomirsky and Lepper (1999) found that the one sample made up of exclusively adolescent participants reported one of the highest mean scores.

These findings suggest that while positive psychology recommends a focus on enhancing positives, interventions geared towards boosting well-being may be particularly useful in the amelioration of negative symptoms, such as those associated with depression. Indeed, some positive psychology-influenced cognitive-behavioural interventions used in schools tend to overtly target the reduction of depressive symptoms as one of their primary emphases, e.g., the PRP and RAP-A. However, this is not inconsistent with a positive psychology perspective, as reducing depressive symptoms represents a net positive. When baseline levels of variables such as subjective happiness and life satisfaction are above the recommended neutral point, it may be that more intensive intervention techniques are required to secure the desired increases. It is worth noting in this context that depressive symptoms were quite high at baseline in the two all-female schools, and the success of the mindfulness intervention in reducing those symptoms to the point of statistical significance at post-test may well be linked to the fact that because those symptoms were elevated they were amenable to being reduced. An equivalent situation lending itself to increased subjective happiness and life satisfaction may not have been in place, given the strong baseline scores present. However, this possible explanation does not account for the fact that depressive symptoms were relatively low in the all-male school, but

nonetheless seemed responsive to the CBC programme. This, in turn, may be at least partly accounted for by the literature indicating that female adolescents are more likely to experience high levels of depressive symptoms than males (e.g., Piccinelli & Wilkinson, 2000; Van de Velde et al., 2010).

It is also possible that the relatively high scores seen at baseline in the SHS and SWLS measures may have helped to facilitate the reduction in depressive symptoms. Fredrickson's broaden-and-build theory (1998) proposes that the experience of positive emotions broadens individual awareness and encourages novel forms of thought and action, while also being linked with the cultivation of cognitive skills and resources which can be deployed in healthy coping styles (Fredrickson & Joiner, 2002). When viewed from this perspective, it could be argued that the high levels of subjective happiness and life satisfaction seen at baseline meant that active condition participants were well positioned to report reduced depressive symptoms arising from their involvement in the respective intervention programmes. As noted above, while SHS and SWLS scores did not increase markedly, the trend was for those scores to move in the desired direction, so it is possible that these modest gains were an expression of the same process that facilitated the more noticeable declines in depressive symptoms. However, this argument does not account for the fact that no significant results were found for the gratitude intervention, though comparisons between the two conditions over time on all three outcome variables suggested changes in the desired direction between the respective sets of participants. Aspects of the conduct of the gratitude intervention were sufficiently different to that seen with the CBC and mindfulness programmes to perhaps at least partly account for the absence of statistically significant results. The specifics of this will be addressed next

in the limitations section. However, having discussed the results and reflected upon their implications, the key finding in this research is that CBC and mindfulness programmes merit further consideration in an Irish context and may prove to be useful interventions for well-being in school settings. In the current research, these programmes ran for a relatively short period of time and yet statistically significant results were found for the reduction of depressive symptoms. While these effects were not sustained over time, it still points to the potential of these approaches if placed on a more formal footing and/or conducted over a longer period or at regular intervals among adolescents in the school setting.

29.4 Limitations

There are a number of potential limitations in this research which should be acknowledged. With regard to the initial survey, it included 11 questionnaires, covering a range of variables. More variables could have been assessed, but teachers in many schools cautioned against including too many questionnaires, as doing so would run the risk of the adolescent participants losing interest and not completing the survey. On a similar note, with regard to the variables assessed in the survey, questionnaires other than those selected might have been chosen and functioned at least as well as those used. With the composition of the target population in mind, a conscious effort was made to ensure that while all questionnaires should be suitable for adolescent participants, where there was a choice to be made between a longer questionnaire and a shorter questionnaire, the latter was chosen, so to keep the overall number of items to a minimum, with a view towards encouraging completion. Even with this in mind, the 11 questionnaires used included a total of 138 items.

With regard to the intervention phase, each programme ran for a relatively short period of time – four weeks and/or four sessions. While this research was exploratory in nature, it may well have been desirable for the interventions to have extended over more sessions. However, because the studies took place in a school setting and during school hours, there were timetable-related pressures involved. While TY students are more accessible to researchers than students at points in the cycle where the emphasis is more on exam preparation, there are also a number of different projects competing for time among these students, e.g., work placements, school tours, sports participation, and theatrical presentations. Given the various commitments being incorporated into the respective school timetables, it would not have been possible to extend the intervention programmes to six or eight weeks. However, these restrictions were also a strength of sorts, as they highlight how this research was conducted in a ‘real world’ school setting, and all the issues and challenges faced here would also have to be confronted by any other researcher in seeking to further implement any such programmes. Ultimately, it is reasonable to note that whatever the nature of a participant sample, there will always be competing demands for time, whether they be adolescents or adults. On a similar point, each session for the CBC and mindfulness programmes was limited to a single class period, approximately 40 minutes. Longer sessions might have been more desirable, but, again, timetable-related restrictions meant that it was not possible to facilitate 60-80 minute sessions. With specific regard to the gratitude intervention, as mentioned previously, participants were asked to complete gratitude logs on their own time, as opposed to in a scheduled class. This means that some participants may have taken the task more seriously than others, i.e., some may have followed the instruction to take the time to reflect upon what they were grateful for, whereas others may have rushed the list on the morning that each

set of logs were to be collected. Given the fact that the school was unable to schedule a class period in which the active condition participants could write up their gratitude logs, it is impossible to know to what extent individual participants gave the exercise the necessary time and attention. However, having said that, it could also be argued that even if all the active participants had been gathered together in a classroom each week for the duration of the programme, that would represent no guarantee that each of them would have devoted the necessary thought and attention to completing the active condition task.

Sample sizes were small in each of the intervention studies, and numbers were lost over time, particularly in the CBC study, in which the starting participant group was already the smallest of the three. Participants groups ranged from just over 20 to approximately 30, as opposed to more than 200 in some of the intervention studies referred to in the Introduction section. Had greater numbers been involved in the current research and the same results found, that would have added weight to those findings. As it is, the results point to the potential of these approaches to impact positively on adolescent well-being, but the sample size issue has to be acknowledged.

Also, there are questions around the generalisability of these findings. The participant population for the survey was drawn from adolescents in Cork city and county, with the three intervention schools selected from the original 13. Schools were a mix of urban, suburban, and more rural, with the socio-economic profiles of the respective catchment areas tending to vary slightly, but the vast majority of participating schools catered for a student population neither particularly well-off nor economically

disadvantaged. It is not clear to what extent these findings would be replicated elsewhere in Ireland or internationally. Further research would be required before achieving clarity on this point, but it is important to stress that the purpose of this research was to assess interventions for use in an Irish setting, and considered against that backdrop, the findings are promising.

Also, with regard to generalisability, it was found that at baseline the all-male CES-DC scores differed significantly from those of the two all-female schools, while the latter samples did not differ from each other. Male depressive symptoms scores were noticeably lower than those seen in the two all-female schools, a finding which was consistent with the literature on adolescence and depression (e.g., Van de Velde, Bracke, and Levecque, 2010). However, this finding highlights the importance of considering sex when attempting to draw conclusions arising from this research. Given that male scores differed significantly from female scores at the outset, it is possible that the CBC intervention might have offered different results had it been undertaken with an all-female sample. By the same token, the mindfulness intervention achieved its results with an all-female sample, i.e., one with higher levels of depressive symptoms at baseline. Had the mindfulness intervention been assigned to the all-male school, this factor may well have contributed to a different pattern in the results. These considerations highlight how it might have been preferable to seek to conduct these interventions either among mixed-sex groups or multiple schools in which all possible sex-based scenarios/combinations were allowed for. However, that was not possible in the current research, due to the make-up of the pool of schools that were potentially available to take part in the intervention phase.

With regard to study design, the absence of an active control group should be noted as a potential limitation. Active control groups are regarded as desirable when seeking to achieve a direct test of the efficacy of an intervention programme, with MacCoon et al. (2012) making this point specifically as it relates to MBSR. Mercer (2011) pointed out that when control groups are not exposed to a new and potentially exciting activity – as was the case during the intervention phase reported here – relative improvements seen among active condition participants may be due to nothing more than non-specific effects of novelty.

While this is a potentially serious limitation and therefore needs to be noted, it is also important to point out that it would not have been possible to conduct the research being reported here with an active control condition. There were issues around practicality and resources in the participating schools. Had the control condition participants been assigned a specific task or programme, as opposed to continuing with scheduled classes when intervention sessions were held, this would have required each school to set aside additional space and personnel to oversee the activity and provide supervision for those students. This option was not available in participating schools at the time that this research was being conducted.

As noted earlier, small sample sizes were an issue during the conduct of the intervention phase, while attrition was also experienced between measurement points for the CBC intervention. Against this backdrop, a retrospective power analysis was conducted arising from results reported as being significant.

In study 2, a significant interaction was reported between depressive symptoms and assignment to either CBC or the control condition, from T1 to T2. After plugging the relevant values, including effect size $f = 0.21$, error probability = .05, and power = .80, into G*Power, the software package calculated that 34 participants would have been required to have 80% certainty of detecting a statistically significant difference. It should be noted that the results reported here were achieved using 23 of the original 27 participants, 11 short of the number specified by G*Power.

In study 3, a significant interaction was reported between depressive symptoms and assignment to either mindfulness or the control condition, from T1 to T2 to T3. This finding was reported based on an analysis including 25 of the original 30 participants. After inserting the relevant values into G*Power (effect size $f = .34$, error probability = .05, and power = .80), the software calculated that 14 participants would have been required to have 80% certainty of detecting a statistically significant difference. For this study, that level was comfortably exceeded.

29.5 Possible Future Research

The findings arising from these studies are sufficiently encouraging as to suggest that this line of research might be successfully developed and built upon in the future. One of the first points to consider is that of scale. The intervention phase involved three schools, each hosting one intervention. While this proved to be an effective approach for the purposes of this research task, in the future it could prove beneficial to seek to involve a larger number of schools in similar studies, and perhaps also to offer more than one intervention designed to enhance well-being in each school. An inherent limitation in this study was that comparisons between participating intervention

schools could only be safely made up to a certain point, as with each hosting a single intervention, any number of environmental and other factors might have influenced results. For example, while the gratitude intervention as conducted did not produce the hoped for findings, it is unclear whether that would have been the case had one of the other schools hosted that intervention, either instead of or along with the CBC or mindfulness interventions. On a similar point, TY groups (participants typically aged 15-16 years) were targeted for the initial survey and follow-up intervention phase not merely because the literature indicated this was an appropriate age profile, but also arising from practical concerns relating to accessibility. Second level institutions in Ireland tend to be more open to outside researchers coming into schools to work with TY groups because students in this year are effectively between the Junior Certificate and Leaving Certificate cycles. In many schools, TY is specifically designed as a year in which students are encouraged to take part in a wider range of activities beyond academic work. Placed on a more formal footing, research of this type could be conducted on an all-school basis, rather than focusing exclusively on any one year.

On a similar point, the length and duration of intervention programmes could also be expanded. In this research, each intervention ran for a period of four weeks, and in the case of the CBC and mindfulness programmes, each session was scheduled for a single class period (40 minutes), while the gratitude intervention was not provided with a slot in the timetable at the relevant school, and therefore active condition participants were effectively asked to complete their assigned tasks on their own time. Extending the intervention programmes over a greater number of weeks, with each individual session assigned more time – thus removing the risk of potentially crucial lost time at the start and conclusion of each session – could prove beneficial. In the

case of the gratitude intervention, while this research did not provide support for its efficacy in an Irish adolescent sample, the specifics of how it is conducted could be altered – with participants assigned a specific time during the weekly timetable to reflect upon the previous seven days and then write their gratitude logs. This would help to ease or remove the uncertainty seen in the present research over which participants took the necessary care over their logs and which perhaps rushed their task on the days that the relevant sheets were to be collected. It is possible that none of the participants rushed their writing tasks, but given the way the intervention programme needed to be conducted in order to secure the necessary co-operation from the relevant school, there is ambiguity around this point.

As a universal approach, these intervention strategies could be unfolded throughout entire schools, and formally placed on the timetable, perhaps as a recurring module or with different classes staggered throughout the school year. The mental health of young people is a major concern in this country, and if cognitive- and mindfulness-based approaches have the potential to assist adolescents in successfully navigating this period of life, then not to actively explore this potential may constitute a missed opportunity.

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APPENDIX 1 – Letter sent to schools seeking participation in the survey

Room G13,
School of Applied Psychology,
UCC Enterprise Centre,
North Mall,
Cork city.

5/4/2012

My name is Mark Barry, and I am a PhD student at the School of Applied Psychology in University College Cork. My specialised area is adolescent well-being, and with that in mind, I hope to conduct research with Transition Year students in a number of Cork city and county schools during the 2012/13 school year.

I am writing to you at this time because I am looking to establish how many schools are open to the possibility of participating in this research. I envisage that the research will be conducted in two parts – with the initial study taking the form of a survey, and the second part being an in-class intervention designed to enhance well-being amongst an adolescent target population.

It is my intention to conduct the survey next September, and I hope to enlist as many schools as possible for this element of my work. With a survey, the findings can carry more weight if you maximise the number of respondents, so, in simple terms, the more TY classes I can source for that part of my research, the more useful the findings can be.

The survey would entail participating students (following the appropriate process to secure informed consent) completing a number of self-report questionnaires and scales on relevant points, such as optimism, attitudes towards health, attributional style, satisfaction with life, and dispositional mindfulness. Ideally, these surveys would be completed in class, during scheduled school hours, and in a single session.

I intend to begin the in-class intervention phase from next January. While I hope to recruit as many schools as possible for the survey, the more targeted nature of an in-class intervention means that I would be looking to work with a very limited number of schools for this part of the research. The survey results may influence the final decisions on which interventions, but I will look to use a cognitive behavioural intervention such as the Penn Resiliency Program (PRP), which is specifically designed to reduce depressive symptoms and enhance well-being, Mindfulness Based Stress Reduction (MBSR), and gratitude exercises. As my research is currently designed, one school would be assigned to the PRP intervention, one to the MBSR intervention, and one to the gratitude intervention, with one of the main purposes of the work being to compare the effects of each intervention on the different groups, to see which proved most beneficial in enhancing feelings of well-being.

PRP and MBSR and similar-type interventions require multiple sessions, perhaps eight to twelve sessions depending upon the implementation strategy. Again, this would need to be done within the classroom, and so those sessions would need to be scheduled into the school timetable from January onwards, and I would conduct each individual session in person. With that in mind, I am currently in the process of securing garda clearance for working with minors.

For control purposes, half of the TY class would take part in the intervention, while the other half would continue with whatever would otherwise be scheduled in the school timetable. This strategy allows for the effects of the intervention to be measured, as both groups would complete a batch of questionnaires immediately prior to the first intervention session and at the completion of the final intervention session.

So, as I said, the main purpose of this letter is to find out what schools are open to becoming involved in this research, either through participating in the survey or signalling interest in being considered for the intervention as well as the survey. I understand that you will need to schedule your TY programme for 2012/13 in advance of the year, so over the next few weeks I hope to establish a definitive list of which schools are taking part in the survey, and which will be earmarked for the intervention phase.

You can reply to me at the address listed above, alternatively I can be contacted directly at mark.a.barry@umail.ucc.ie or via mobile – 087 9274086. I will be happy to answer any questions you may have about this research, or to clarify any issues that you feel arise from this request.

Yours sincerely,

Mark Barry

CC: Transition Year co-ordinator

APPENDIX 2 – Information sheet for survey participants

Purpose of the Study. As part of the requirements for a PhD in Applied Psychology at UCC, I have to carry out a research study. The study is concerned with the experience of well-being in adolescence.

What will the study involve? The study will involve participants completing a series of questionnaires during school hours. It is anticipated that the entire process will take place during two consecutive class periods.

Why have you been asked to take part? You have been asked because Transition Year has been judged to be the most appropriate group of students for this research, both in terms of age and accessibility.

Do you have to take part? Participation is voluntary. Because Transition Year students are under 18 years of age, parental consent is required. If either you or your parent/guardian decides against participation, then it is your right to do so. In the event that consent is forthcoming, a consent form will be signed, and you will keep a copy of that form along with this information sheet. You can withdraw consent at any time up to two weeks after completing the study.

Will your participation in the study be kept confidential? Yes. I will ensure that no clues to your identity appear in the thesis, so all participants will remain anonymous.

What will happen to the information which you give? The data will be kept confidential for the duration of the study. On completion of the thesis, the data will be retained for a further six months and then destroyed.

What will happen to the results? The results will be presented in my thesis. They will be seen by my supervisor, a second marker and the external examiner. The thesis may be read by future students on the course. The study may be published in an academic journal.

What are the possible disadvantages of taking part? I don't envisage any negative consequences for you in taking part.

Who has reviewed this study? Approval must be given by the UCC School of Applied Psychology Ethics Committee before studies like this can take place, and this approval has been granted to this study.

Any further queries? If you need any further information, you can contact me via email: mark.a.barry@umail.ucc.ie.

APPENDIX 3 – Consent form for school principals (survey)

School of Applied Psychology,
UCC Enterprise Centre,
North Mall,
Cork city.

Please read the following information and sign at the bottom of the page if you consent to your school participating in this survey research.

I _____ have read the relevant information and been informed as to the nature of this research project, and any queries I raised were answered to my satisfaction.

Therefore, I give my permission for Transition Year students at _____ to participate in this survey. I understand that research data gathered may be published, but that this information will be presented in such a manner as to ensure that neither the school or the pupils will be identifiable.

I understand that this survey requires participants to complete a number of questionnaires on subjective well-being, depressive symptoms, life satisfaction, beliefs on academic performance, attributional style, gratitude, dispositional optimism, self-efficacy, resilience, self-esteem, dispositional mindfulness, personality, substance abuse, and general health, as well as a form on demographics.

School principal signature _____

School _____

Date _____

APPENDIX 4 – Consent form for parents (survey)

School of Applied Psychology,
UCC Enterprise Centre,
North Mall,
Cork city.

**Unique identifier (last four digits of
participant's mobile phone number) :**

Dear Parent/Guardian,

I am writing to request your permission for your son/daughter to participate in a survey looking at the relationship between well-being in adolescents and a number of related variables - depressive symptoms, life satisfaction, beliefs on academic performance, attributional style, gratitude, dispositional optimism, self-efficacy, resilience, self-esteem, dispositional mindfulness, personality, substance abuse, and general health.

This survey is being conducted as part of a PhD research project which will see Transition Year students in more than 20 schools throughout Cork city and county participating. It is hoped that full Transition Year classes in each school will take part, but it is up to every parent/guardian to give their consent or choose not to do so.

This study is taking place against the backdrop of research findings which suggest that mental health problems are common amongst Irish adolescents, and it is hoped that the findings of this survey will contribute to the formulation of a programme of in-school interventions designed to enhance well-being among adolescents.

What does this involve?

Participating pupils will be asked to complete a series of questionnaires on the topics listed on the previous page. This will take place during class-time.

Is participation compulsory?

No. Participation is completely voluntary and dependent upon you giving consent by signing this document and your son/daughter returning it to their school.

What will happen to the questionnaires after completion?

The answers given by all participants will be typed into a computer by the researcher. The physical papers will be securely stored at UCC's School of Applied Psychology. The data will be analysed by Mark Barry on a secure computer in UCC. No identifying information will be recorded, meaning the anonymity of all participating individuals is guaranteed. The findings will be published in the researcher's PhD thesis, but no individual will be identified.

Who is the researcher?

My name is Mark Barry, and I am a PhD student at the School of Applied Psychology, UCC.

If I have any questions, how do I contact the researcher?

I can be contacted via email – mark.a.barry@umail.ucc.ie – or by phone on 087 9274086.

Yours sincerely,

Mark Barry

I give my consent for my son/daughter to take part in this survey research.

Parent/Guardian signature _____

APPENDIX 5 - Consent form for Participants (survey)

School of Applied Psychology,
UCC Enterprise Centre,
North Mall,
Cork city.

**Unique identifier (last four digits of
participant's mobile phone number) :**

I _____ agree to participate in Mark Barry's research study.

The purpose of the study has been explained to me and I understand it.

I am participating voluntarily.

I understand that I can withdraw from the study, without repercussions, at any time whether before it starts or while I am participating.

I understand I can withdraw my permission to use the data within two weeks of the study, in which case the material I have provided will be deleted. I understand that anonymity will be preserved in the write-up.

Signed _____ Date: _____

APPENDIX 6 – INITIAL WELL-BEING SURVEY



University College Cork Adolescent Well-Being Survey

page 1

Thank you for agreeing to participate in the University College Cork Well-Being Survey, which is being conducted through UCC School of Applied Psychology. This survey is composed of 12 individual questionnaires. You are expected to complete each questionnaire.

First, please provide the basic demographic information requested below.

Unique identifier

While anonymity is guaranteed, the researcher needs to group each individual's survey answers together. With that in mind, it is necessary that you provide a unique identifier. If you have a mobile phone, please provide the last four digits in the space below. If you do not have a mobile phone, please provide the last four digits of your home landline telephone. _____

1. Age

How old are you? _____

2. Sex/Gender

What is your sex? (tick the box by the applicable description)

Male ☐

Female ☐

3. Race/ethnicity

How would you describe your ethnicity? (tick the box by the applicable description)

White or white Irish ☐

Irish traveller ☐

Any other white background ☐

Black or black Irish; African ☐

Any other black background ☐

Asian or Asian Irish; Chinese ☐

Any other Asian background ☐

Other, including mixed ethnic background ☐

Researcher contact information:
If you have any questions relating to this research subsequent to completing the survey, please feel free to contact the researcher via email: mark.a.barry@umail.ucc.ie

Questionnaire #1:

For each of the following statements and/or questions, please circle the point on the scale that you feel is most appropriate in describing you.

1. In general, I consider myself:

1	2	3	4	5	6	7
not a very happy person					a very happy person	

2. Compared to most of my peers, I consider myself:

1	2	3	4	5	6	7
less happy					more happy	

3. Some people are generally very happy. They enjoy life regardless of what is going on, getting the most out of everything. To what extent does this characterization describe you?

1	2	3	4	5	6	7
not at all					a great deal	

4. Some people are generally not very happy. Although they are not depressed, they never seem as happy as they might be. To what extent does this characterization describe you?

1	2	3	4	5	6	7
not at all					a great deal	

Questionnaire #2:

INSTRUCTIONS: Below is a list of the ways you might have felt or acted. Please check how *much* you have felt this way during the *past week*.

DURING THE PAST WEEK	Not At All	A Little	Some	A Lot
1. I was bothered by things that usually don't bother me.	_____	_____	_____	_____
2. I did not feel like eating, I wasn't very hungry.	_____	_____	_____	_____
3. I wasn't able to feel happy, even when my family or friends tried to help me feel better.	_____	_____	_____	_____
4. I felt like I was just as good as other kids.	_____	_____	_____	_____
5. I felt like I couldn't pay attention to what I was doing.	_____	_____	_____	_____

DURING THE PAST WEEK	Not At All	A Little	Some	A Lot
6. I felt down and unhappy.	_____	_____	_____	_____
7. I felt like I was too tired to do things.	_____	_____	_____	_____
8. I felt like something good was going to happen.	_____	_____	_____	_____
9. I felt like things I did before didn't work out right.	_____	_____	_____	_____
10. I felt scared.	_____	_____	_____	_____

DURING THE PAST WEEK	Not At All	A Little	Some	A Lot
11. I didn't sleep as well as I usually sleep.	_____	_____	_____	_____
12. I was happy.	_____	_____	_____	_____
13. I was more quiet than usual.	_____	_____	_____	_____
14. I felt lonely, like I didn't have any friends.	_____	_____	_____	_____
15. I felt like other teenagers I know were not friendly or that they didn't want to be with me.	_____	_____	_____	_____

DURING THE PAST WEEK	Not At All	A Little	Some	A Lot
16. I had a good time.	_____	_____	_____	_____
17. I felt like crying.	_____	_____	_____	_____
18. I felt sad.	_____	_____	_____	_____
19. I felt people didn't like me.	_____	_____	_____	_____
20. It was hard to get started doing things.	_____	_____	_____	_____

Questionnaire #3:

DIRECTIONS: Below are five statements with which you may agree or disagree. Using the 1-7 scale below, indicate your agreement with each item by placing the appropriate number in the line preceding that item. Please be open and honest in your responding.

- 1 = Strongly Disagree
- 2 = Disagree
- 3 = Slightly Disagree
- 4 = Neither Agree or Disagree
- 5 = Slightly Agree
- 6 = Agree
- 7 = Strongly Agree

- _____ 1. In most ways my life is close to my ideal.
- _____ 2. The conditions of my life are excellent.
- _____ 3. I am satisfied with life.
- _____ 4. So far I have gotten the important things I want in life.
- _____ 5. If I could live my life over, I would change almost nothing.

Questionnaire #4:

Using the scale below as a guide, write a number beside each statement to indicate how much you agree with it.

- 1 = Strongly Disagree
- 2 = Disagree
- 3 = Slightly Disagree
- 4 = Neutral
- 5 = Slightly Agree
- 6 = Agree
- 7 = Strongly Agree

- _____ 1. I have so much in life to be thankful for.
- _____ 2. If I had to list everything that I felt grateful for, it would be a very long list.
- _____ 3. When I look at the world, I don't see much to be grateful for.
- _____ 4. I am grateful to a wide variety of people.
- _____ 5. As I get older I find myself more able to appreciate the people, events, and situations that have been part of my life history.
- _____ 6. Long amounts of time can go by before I feel grateful to something or someone.

Questionnaire #5:

Instructions:

Please answer the following questions about yourself by indicating the extent of your agreement using the following scale:

- 0 = Strongly Disagree
- 1 = Disagree
- 2 = Neutral
- 3 = Agree
- 4 = Strongly Agree

Be as honest as you can throughout, and try not to let your responses to one question influence your response to other questions. There are no right or wrong answers.

- _____ 1. In uncertain times, I usually expect the best.
- _____ 2. It's easy for me to relax,
- _____ 3. If something can go wrong for me, it will.
- _____ 4. I'm always optimistic about my future.
- _____ 5. I enjoy my friends a lot.
- _____ 6. It's important for me to keep busy.
- _____ 7. I hardly ever expect things to go my way,
- _____ 8. I don't get upset too easily.
- _____ 9. I rarely count on good things happening to me.
- _____ 10. Overall, I expect more good things to happen to me than bad.

Questionnaire #6:

Instructions:

Please answer the following questions about yourself by indicating the extent of your agreement using the following scale:

- 1 = Not at all true
- 2 = Hardly true
- 3 = Moderately true
- 4 = Exactly true

- _____ 1. I can always manage to solve difficult problems if I try hard enough.
- _____ 2. If someone opposes me, I can find the means and ways to get what I want.
- _____ 3. It is easy for me to stick to my aims and accomplish my goals.
- _____ 4. I am confident that I could deal efficiently with unexpected events.
- _____ 5. Thanks to my resourcefulness, I know how to handle unforeseen situations.
- _____ 6. I can solve most problems if I invest the necessary effort.
- _____ 7. I can remain calm when facing difficulties because I can rely on my coping abilities.
- _____ 8. When I am confronted with a problem, I can usually find several solutions.
- _____ 9. If I am in trouble, I can usually think of a solution.
- _____ 10. I can usually handle whatever comes my way.

Questionnaire #7:

Instructions: Below is a list of statements dealing with your general feelings about yourself. If you strongly agree, circle **SA**. If you agree with the statement, circle **A**. If you disagree, circle **D**. If you strongly disagree, circle **SD**.

- | | |
|---|-----------------|
| 1. On the whole, I am satisfied with myself. | SA A D SD |
| 2. At times, I think I am no good at all. | SA A D SD |
| 3. I feel that I have a number of good qualities. | SA A D SD |
| 4. I am able to do things as well as most other people. | SA A D SD |
| 5. I feel I do not have much to be proud of. | SA A D SD |
| 6. I certainly feel useless at times. | SA A D SD |
| 7. I feel that I'm a person of worth, at least on an equal plane with others. | SA A D SD |
| 8. I wish I could have more respect for myself. | SA A D SD |
| 9. All in all, I am inclined to feel that I am a failure. | SA A D SD |
| 10. I take a positive attitude toward myself. | SA A D SD |

Questionnaire #8:

Instructions: Below is a collection of statements about your everyday experience. Using the 1-6 scale below, please indicate how frequently or infrequently you currently have each experience. Please answer according to what really reflects your experience rather than what you think your experience should be. Please treat each item separately from every other item.

- 1 = Almost Always
2 = Very Frequently
3 = Somewhat Frequently
4 = Somewhat Infrequently
5 = Very Infrequently
6 = Almost Never

	Almost Always			Almost Never		
I could be experiencing some emotion and not be conscious of it until some time later.	1	2	3	4	5	6
I break or spill things because of carelessness, not paying attention, or thinking of something else.	1	2	3	4	5	6
I find it difficult to stay focused on what's happening in the present.	1	2	3	4	5	6
I tend to walk quickly to get where I'm going without paying attention to what I experience along the way.	1	2	3	4	5	6
I tend not to notice feelings of physical tension or discomfort until they really grab my attention.	1	2	3	4	5	6
I forget a person's name almost as soon as I've been told it for the first time.	1	2	3	4	5	6
It seems I am "running on automatic," without much awareness of what I'm doing.	1	2	3	4	5	6
I rush through activities without being really attentive to them.	1	2	3	4	5	6
I get so focused on the goal I want to achieve that I lose touch with what I'm doing right now to get there.	1	2	3	4	5	6

	Almost Always			Almost Never		
I do jobs or tasks automatically, without being aware of what I'm doing.	1	2	3	4	5	6
I find myself listening to someone with one ear, doing something else at the same time.	1	2	3	4	5	6
I drive places on 'automatic pilot' and then wonder why I went there.	1	2	3	4	5	6
I find myself preoccupied with the future or the past.	1	2	3	4	5	6
I find myself doing things without paying attention.	1	2	3	4	5	6
I snack without being aware that I'm eating.	1	2	3	4	5	6

Questionnaire #9:

For each of the following questions, please circle the point on the scale that you feel is most appropriate in describing you.

- 1 = Not At All
2 = Slightly
3 = Moderately
4 = Very Much
5 = Extremely

	Not at All			Extremely	
1. Are you a talkative person?	1	2	3	4	5
2. Does your mood often go up and down?	1	2	3	4	5
3. Are you rather lively?	1	2	3	4	5
4. Do you ever feel miserable for no reason?	1	2	3	4	5
5. Do you enjoy meeting new people?	1	2	3	4	5
6. Are you an irritable person?	1	2	3	4	5
7. Can you usually let yourself go and enjoy yourself at a lively party?	1	2	3	4	5
8. Are your feelings easily hurt?	1	2	3	4	5
9. Do you usually take the initiative in making new friends?	1	2	3	4	5
10. Do you often feel “fed-up”?	1	2	3	4	5
11. Can you easily get some life into a rather dull party?	1	2	3	4	5
12. Would you call yourself a nervous person?	1	2	3	4	5
13. Do you tend to keep in the background on social occasions?	1	2	3	4	5
14. Are you a worrier?	1	2	3	4	5
15. Do you like mixing with people?	1	2	3	4	5
16. Would you call yourself tense or “highly-strung”?	1	2	3	4	5
17. Do you like to have plenty of action and excitement around you?	1	2	3	4	5
18. Do you worry too long after an embarrassing experience?	1	2	3	4	5
19. Are you mostly quiet when you are with other people?	1	2	3	4	5
20. Do you suffer from nerves?	1	2	3	4	5
21. Do other people think of you as being very lively?	1	2	3	4	5
22. Do you often feel lonely?	1	2	3	4	5
23. Can you get a party going?	1	2	3	4	5
24. Are you often troubled about feelings of guilt?	1	2	3	4	5

Questionnaire #10:

Please read the following statements. To the right of each you will find seven numbers, ranging from “1” (Strongly Disagree) on the left to “7” (Strongly Agree) on the right. Circle the number which best indicates your feelings about that statement. For example, if you strongly disagree with a statement, circle “1”. If you are neutral, circle “4”, and if you strongly agree, circle “7”, etc. You must answer every question to submit the test for scoring.

	Strongly Disagree					Strongly Agree	
1. I usually manage one way or another.	1	2	3	4	5	6	7
2. I feel proud that I have accomplished things in life.	1	2	3	4	5	6	7
3. I usually take things in my stride.	1	2	3	4	5	6	7
4. I am friends with myself.	1	2	3	4	5	6	7
5. I feel that I can handle many things at a time.	1	2	3	4	5	6	7
6. I am determined.	1	2	3	4	5	6	7
7. I can get through difficult times because I've experienced difficulty before.	1	2	3	4	5	6	7
8. I have self-discipline.	1	2	3	4	5	6	7
9. I keep interested in things.	1	2	3	4	5	6	7
10. I can usually find something to laugh about.	1	2	3	4	5	6	7
11. My belief in myself gets me through hard times.	1	2	3	4	5	6	7
12. In an emergency, I'm someone people can generally rely on.	1	2	3	4	5	6	7

	Strongly Disagree								Strongly Agree		
13. My life has meaning.	1	2	3	4	5	6	7				
14. When I'm in a difficult situation, I can usually find my way out of it.	1	2	3	4	5	6	7				

Questionnaire #11:

Please try to imagine yourself clearly in each of the situations that follow. Place yourself in each situation and decide what you think would have caused the event if it actually happened to you. We want you to choose only one cause for the event - the main cause if the event actually happened to you. For each situation, you will write down this cause in the blank space provided. Then we will ask you some questions about what it would mean to you if the situation actually happened to you. It is important to remember there are no right or wrong answers to the questions. The important thing is to answer the questions how you would think and feel if the situations actually were occurring in your life.

1. You take a test and get a bad grade.

a. Write down why you think you got a bad grade.

b. Did you get a bad grade because of something about you or because of something else? (Circle one number).

Totally caused by something else	1	2	3	4	5	6	7	Totally caused by something about me
-------------------------------------	---	---	---	---	---	---	---	--

c. Do you think the reason for getting a bad grade will cause you to get bad grades in the future? (Circle one number).

Will never again cause me to get a bad test grade	1	2	3	4	5	6	7	Will also cause me to get bad test grades in the future
---	---	---	---	---	---	---	---	--

d. Do you think the reason for your bad grade will cause problems in other parts of your life? (Circle one number).

Will only cause problems with my test grades	1	2	3	4	5	6	7	Will cause problems in all areas of my life
--	---	---	---	---	---	---	---	---

2. You want a boyfriend/ girlfriend but you don't have one.

a. Write down why you think you don't have a boyfriend/ girlfriend.

b. Do you not have a boyfriend/ girlfriend because of something about you or because of something else? (Circle on number).

Totally caused by something else	1	2	3	4	5	6	7	Totally caused by something about me
-------------------------------------	---	---	---	---	---	---	---	--

c. Do you think the reason you don't have a boyfriend/ girlfriend will cause you to not have a boyfriend/ girlfriend in the future? (Circle one number).

Will never again cause me not to have a boyfriend/ girlfriend	1	2	3	4	5	6	7	Will also cause me not to have a boyfriend/ girlfriend in the future
--	---	---	---	---	---	---	---	---

d. Do you think the reason you don't have a boyfriend/ girlfriend will cause problems in other parts of your life? (Circle one number).

Will only cause problems in my love life	1	2	3	4	5	6	7	Will cause problems in all areas of my life
--	---	---	---	---	---	---	---	---

3. You want to go to a big party, but nobody invites you.

a. Write down why you think you weren't invited to the party.

b. Were you not invited to the party because of something about you or because of something else? (Circle one number).

Totally caused by something else	1	2	3	4	5	6	7	Totally caused by something about me
-------------------------------------	---	---	---	---	---	---	---	--

c. Do you think the reason you weren't invited to the party will also cause you not to be invited to parties in the future? (Circle one number).

Will never again cause me to not get invited to parties	1	2	3	4	5	6	7	Will also cause me to not get invited to parties in the future
---	---	---	---	---	---	---	---	---

d. Do you think the reason you weren't invited to the party will cause problems in other parts of your life? (Circle one number).

Will only cause problems in my social life	1	2	3	4	5	6	7	Will cause problems in all areas of my life
--	---	---	---	---	---	---	---	---

4. You get a bad report card for the semester.

a. Write down why you think you got a bad report card.

b. Did you get a bad report card because of something about you or because of something else? (Circle one number).

Totally caused by something else	1	2	3	4	5	6	7	Totally caused by something about me
-------------------------------------	---	---	---	---	---	---	---	--

c. Do you think the reason you got a bad report card will also cause you to get bad report cards in the future? (Circle one number).

Will never again cause me to get bad report cards	1	2	3	4	5	6	7	Will also cause me to get bad report cards in the future
---	---	---	---	---	---	---	---	---

d. Do you think the reason you got a bad report card will cause problems in other parts of your life? (Circle one number).

Will only cause
problems with
my report cards

1 2 3 4 5 6 7

Will cause
problems in all
areas of my life

5. You get into a big fight with your parents.

a. Write down why you think you got in a big fight with your parents.

b. Did you get in the fight with your parents because of something about you or because of something else? (Circle one number).

Totally caused
by something
else

1 2 3 4 5 6 7

Totally caused
by something
about me

c. Do you think the reason you got in the fight will also cause you to get in fights with your parents in the future? (Circle one number)

Will never again
cause me to get
in a fight with
my parents

1 2 3 4 5 6 7

Will also cause
me to get in
fights with my
parents in future

d. Do you think the reason you got in the fight with your parents will cause problems in other parts of your life? (Circle one number)

Will only cause
problems with
my parents

1 2 3 4 5 6 7

Will cause
problems in all
areas of my life

6. Your teacher yells at you at school

a. Write down why you think your teacher yelled at you at school.

b. Did your teacher yell at you because of something about you or because of something else? (Circle one number).

Totally caused by something else	1	2	3	4	5	6	7	Totally caused by something about me
-------------------------------------	---	---	---	---	---	---	---	--

c. Do you think the reason your teacher yelled at you will also cause your teacher to yell at you in the future? (Circle the number).

Will never again Cause the teacher To yell at me	1	2	3	4	5	6	7	Will always cause teacher to yell at me in the future
--	---	---	---	---	---	---	---	--

d. Do you think the reason your teacher yelled at you will cause problems in other parts of your life? (Circle one number).

Will only cause problems with my teacher	1	2	3	4	5	6	7	Will cause problems in all areas of my life
--	---	---	---	---	---	---	---	---

7. Someone says something bad about how you look.

a. Write down why you think they said something bad about your looks.

b. Did someone say something bad about your looks because of something about you or because of something else? (Circle one number).

Totally caused by something else	1	2	3	4	5	6	7	Totally caused by something about me
-------------------------------------	---	---	---	---	---	---	---	--

c. Do you think the reason someone said something bad about your looks will cause people to say bad things about your looks in the future? (Circle one number).

Will never again
Cause people to
Say bad things
about my looks

1

2

3

4

5

6

7

Will also cause
people to say
bad things
about my looks
in the future

d. Do you think the reason someone said something bad about your looks will cause problems in other parts of your life? (Circle one number).

Will only cause
problems with
what people say
about my looks

1

2

3

4

5

6

7

Will cause
problems in all
areas of my life

THANK YOU for your participation in this survey.

Researcher contact information:

If you have any questions relating to this research subsequent to completing the survey, please feel free to contact the researcher via email: mark.a.barry@umail.ucc.ie

Your Comments:

If you have any thoughts on the survey you have just completed, please feel free to share them in the space below.

PAGE TO BE REMOVED FOR YOUR REFERENCE

If completing these questionnaires has raised any anxieties for you and you would like the opportunity to talk about those concerns, there are a number of organisations specifically designed to offer support. Below are two groups you can contact if you feel the need.



SAMARITANS: 1850 60 90 90 or 021 4271323

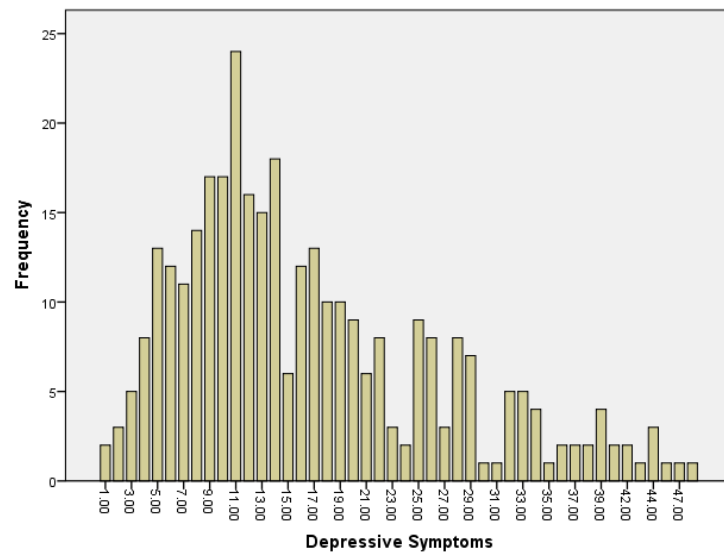
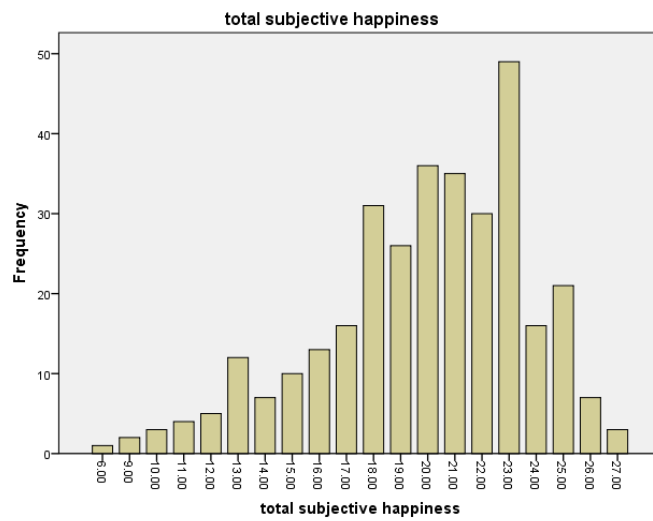


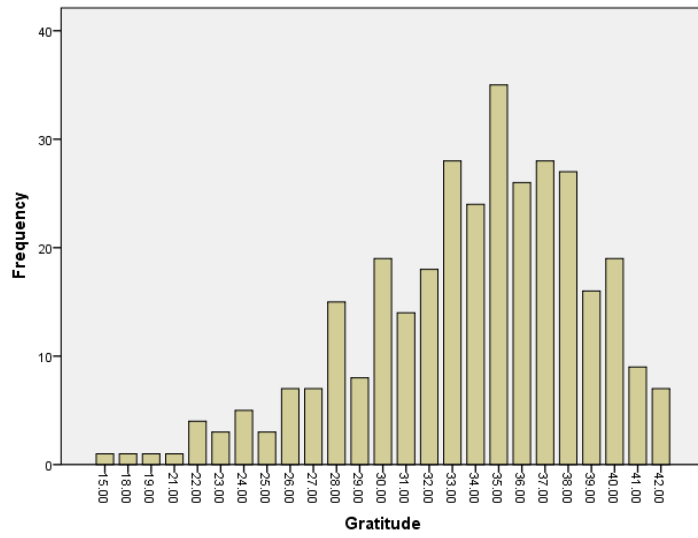
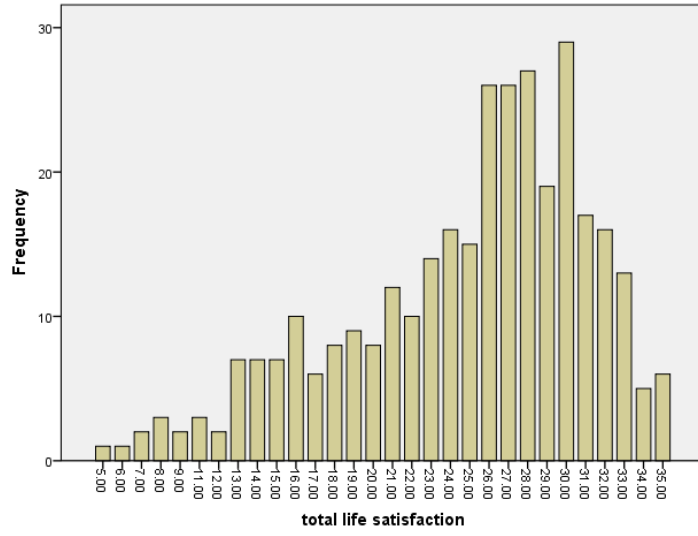
CHILDLINE: 1800 66 66 66

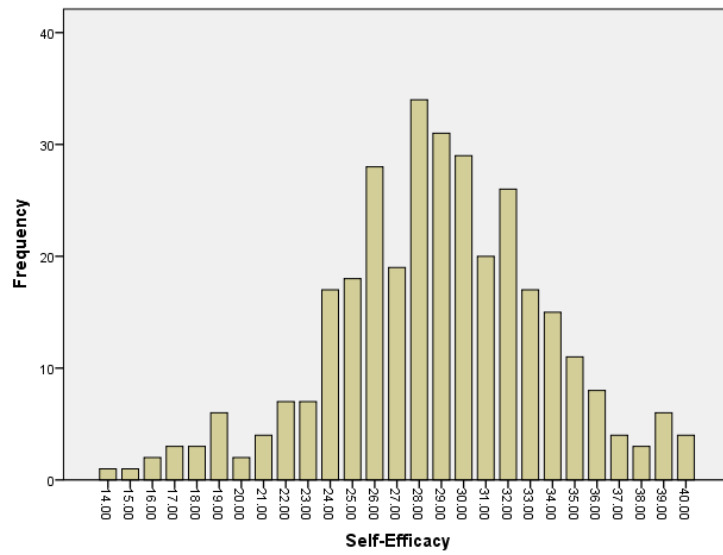
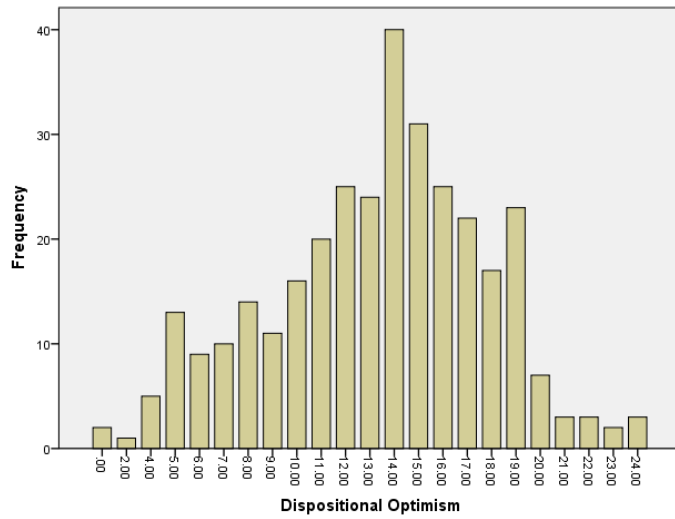
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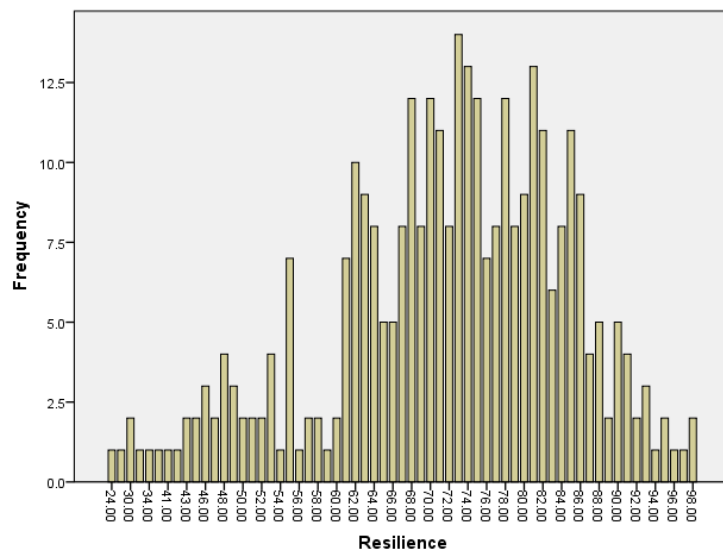
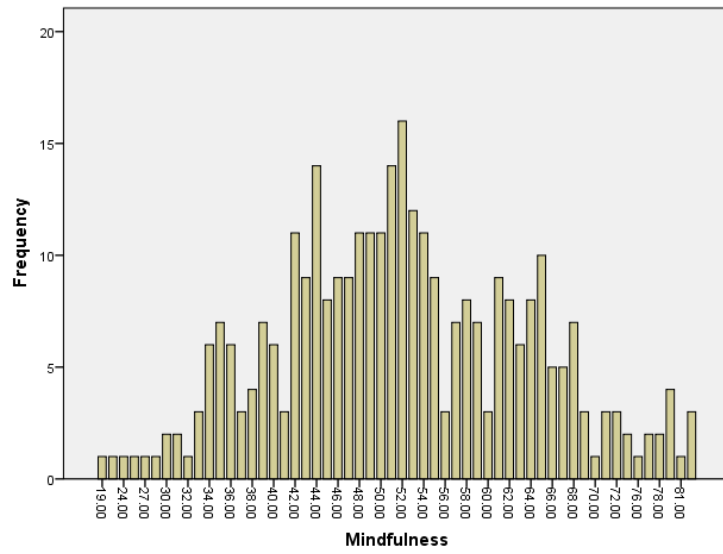
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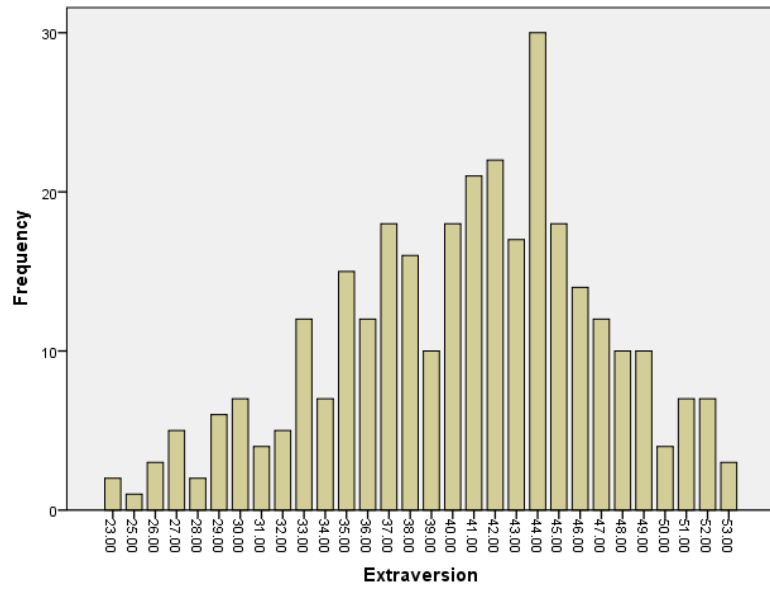
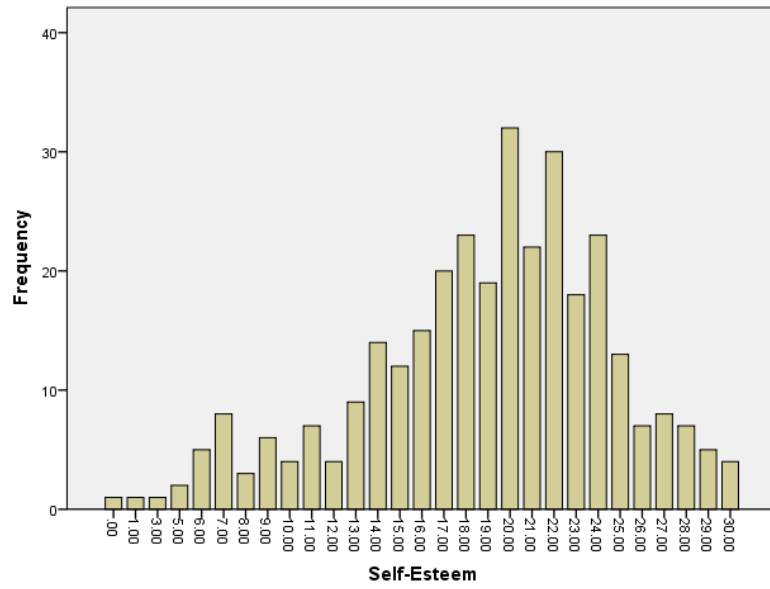
APPENDIX 7 – Histograms showing distribution for survey DVs and IVs

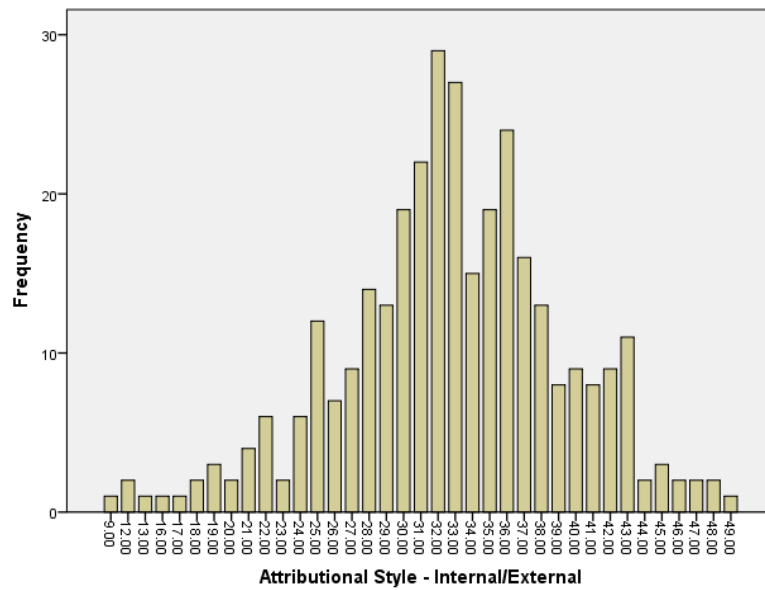
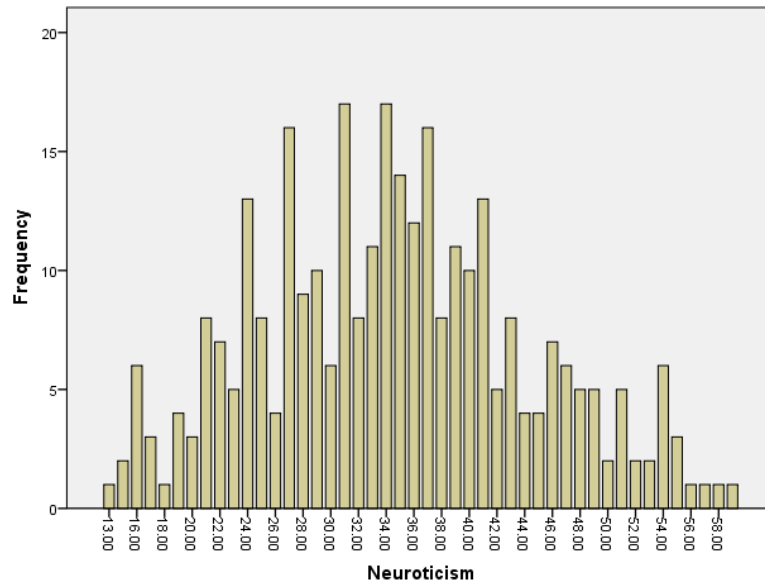


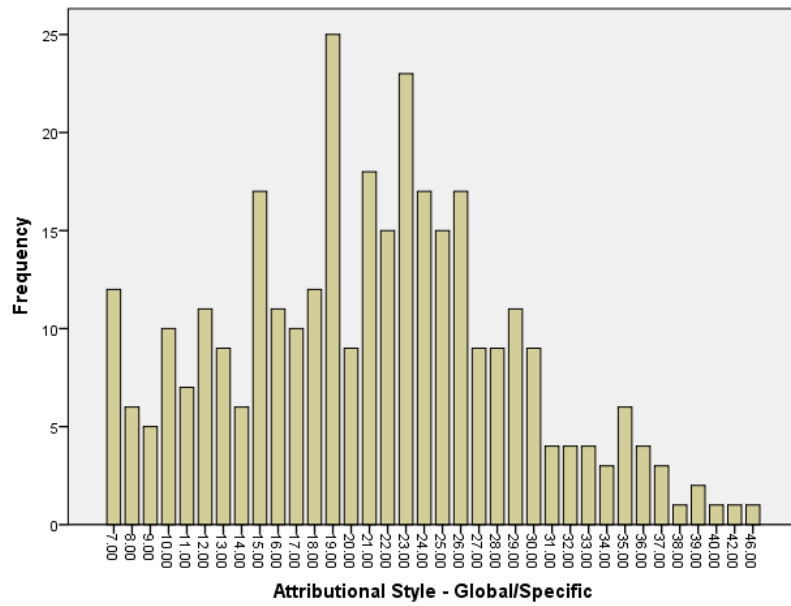
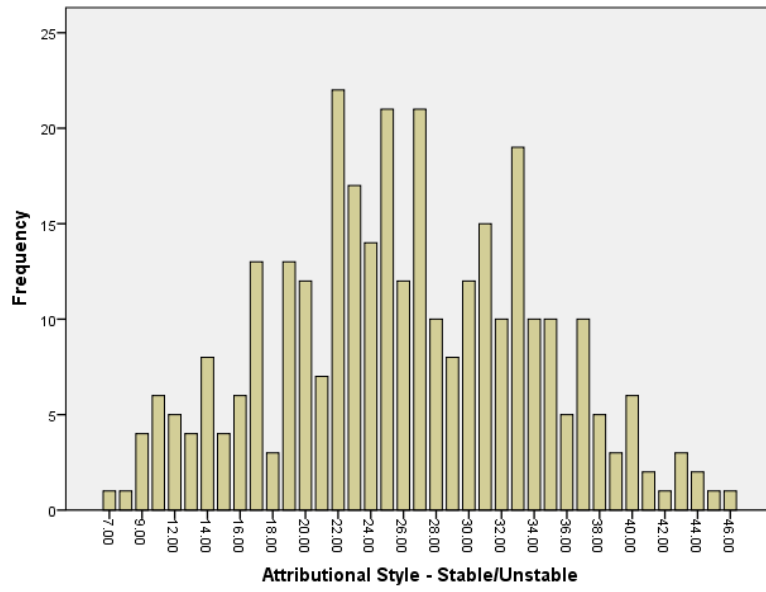


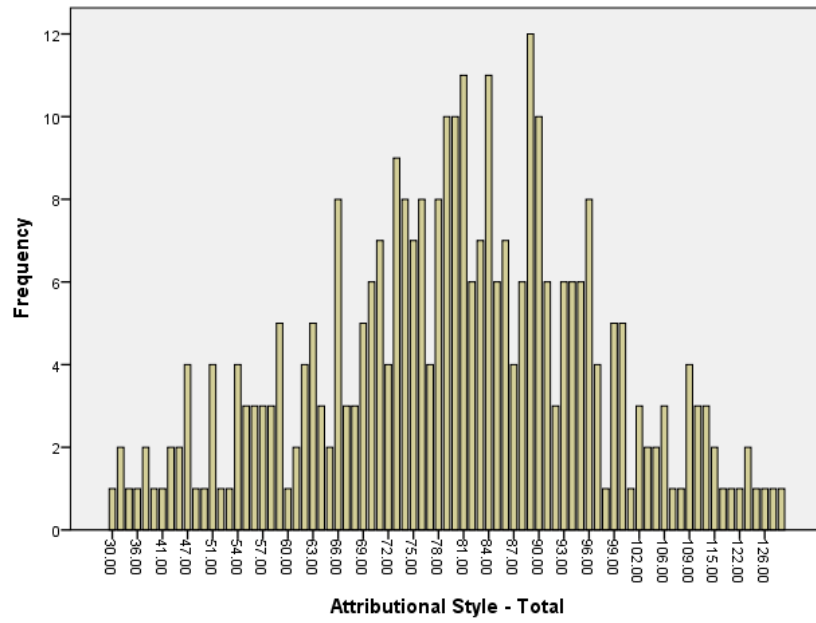










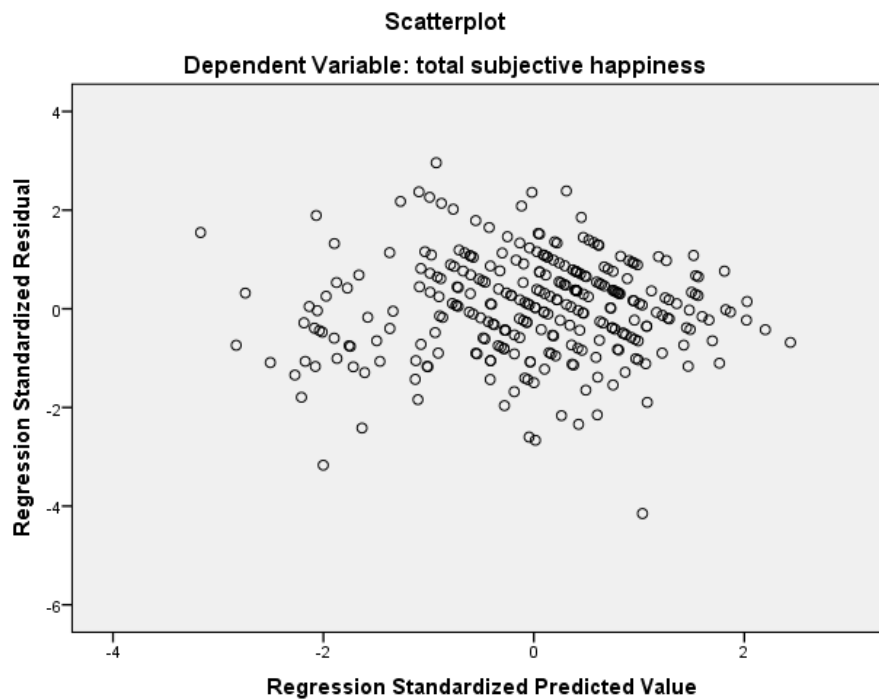
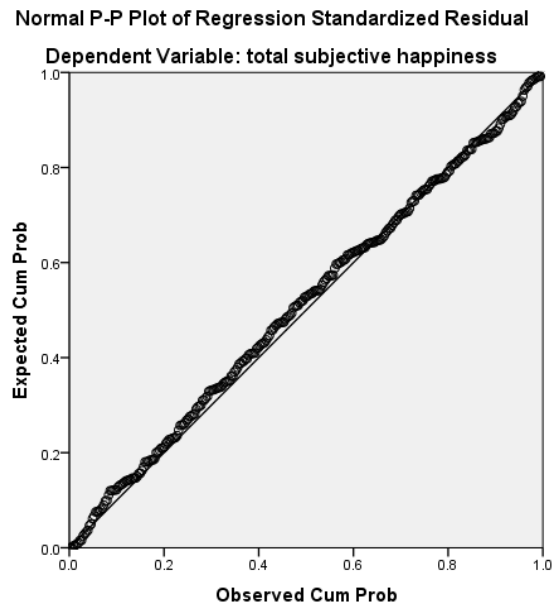


APPENDIX 8 – Correlation matrix

	Subj.Happ	Dep.	L.S.	Op.	Self-eff.	Res.	Self- est.	ACSQ (1)	ACSQ (2)	ACSQ (3)	ACSQ (4)	Grat.	Mind.	Ex.	Neur.
Subjective happiness	1.000	-.595**	.630**	.572**	.396**	.525**	.665**	-.243**	-.420**	-.454**	-.462**	.468**	.328**	.341**	-.592**
Depressive symptoms	-.595**	1.000	-.557**	-.491**	-.394**	-.492**	-.717**	.298**	.442**	.480**	.502**	-.370**	-.403**	-.070	.657**
Life satisfaction	.630**	-.557**	1.000	.551**	.486**	.588**	.725**	-.237**	-.424**	-.405**	-.441**	.541**	.364**	.206**	-.534**
Optimism	.572**	-.491**	.551**	1.000	.475**	.537**	.680**	-.195**	-.407**	-.332**	-.387**	.459**	.420**	.223**	-.515**
Self-efficacy	.396**	-.394**	.486**	.475**	1.000	.699**	.559**	-.170**	-.292**	-.340**	-.332**	.335**	.266**	.237**	-.438**
Resilience	.525**	-.492**	.588**	.537**	.699**	1.000	.661**	-.233**	-.372**	-.423**	-.424**	.443**	.325**	.341**	-.479**
Self-esteem	.665**	-.717**	.725**	.680**	.559**	.661**	1.000	-.356**	-.489**	-.530**	-.564**	.478**	.426**	.184**	-.688**
ACSQ – Int or Ext (1)	-.243**	.298**	-.237**	-.195**	-.170**	-.233**	-.356**	1.000	.470**	.379**	.727**	-.132*	-.168**	-.080	.295**
ACSQ – Stable or Unstable (2)	-.420**	.442**	-.424**	-.407**	-.292**	-.372**	-.489**	.470**	1.000	.652**	.880**	-.359**	-.331**	-.145**	.511**
ACSQ – Global or Specific (3)	-.454**	.480**	-.405**	-.332**	-.340**	-.423**	-.530**	.379**	.652**	1.000	.841**	-.261**	-.334**	-.143*	.530**
ACSQ – Composite (4)	-.462**	.502**	-.441**	-.387**	-.332**	-.424**	-.564**	.727**	.880**	.841**	1.000	-.313**	-.345**	-.152**	.554**
Gratitude	.468**	-.370**	.541**	.459**	.335**	.443**	.478**	-.132*	-.359**	-.261**	-.313**	1.000	.361**	.185**	-.309**
Mindfulness	.328**	-.403**	.364**	.420**	.266**	.325**	.426**	-.168**	-.331**	-.334**	-.345**	.361**	1.000	-.031	-.399**
Extraversion	.341**	-.070	.206**	.223**	.237**	.341**	.184**	-.080	-.145**	-.143*	-.152**	.185**	-.031	1.000	-.135*
Neuroticism	-.592**	.657**	-.534**	-.515**	-.438**	-.479**	-.688**	.295**	.511**	.530**	.554**	-.309**	-.399**	-.135*	1.000

APPENDIX 9 – Probability plots and scatterplots of multiple regression analyses

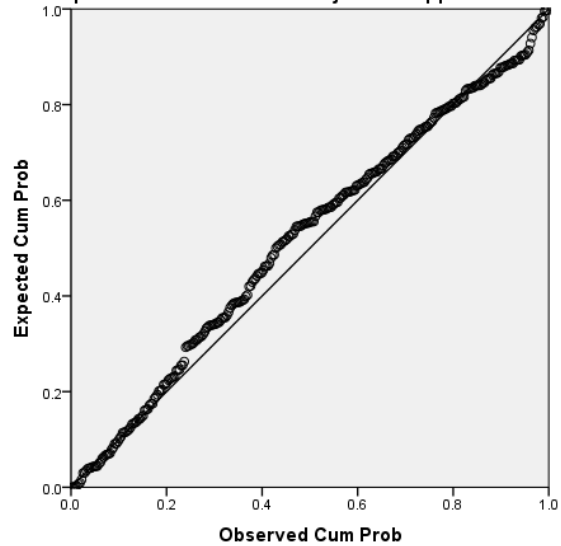
a. Subjective happiness and cognitive variables



b. Subjective happiness and gratitude

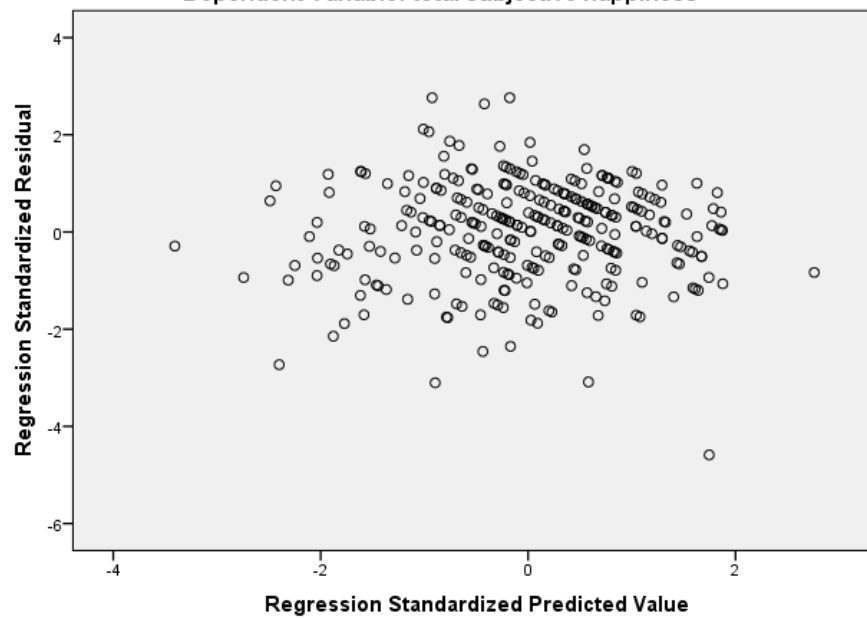
Normal P-P Plot of Regression Standardized Residual

Dependent Variable: total subjective happiness



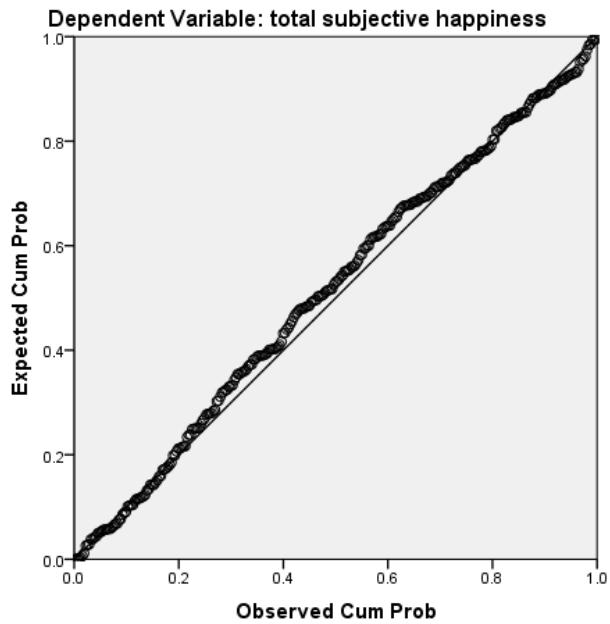
Scatterplot

Dependent Variable: total subjective happiness

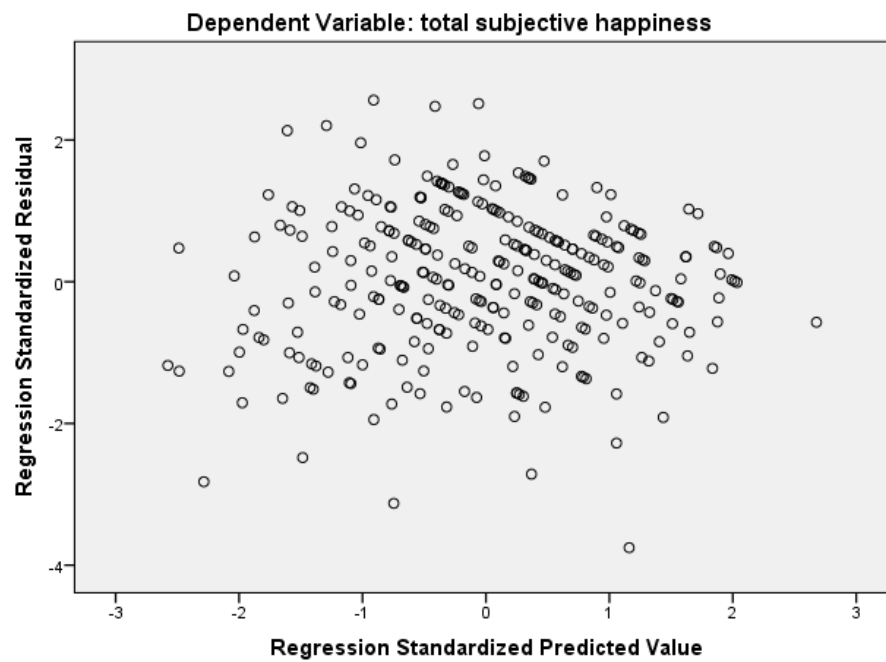


c. Subjective happiness and mindfulness

Normal P-P Plot of Regression Standardized Residual

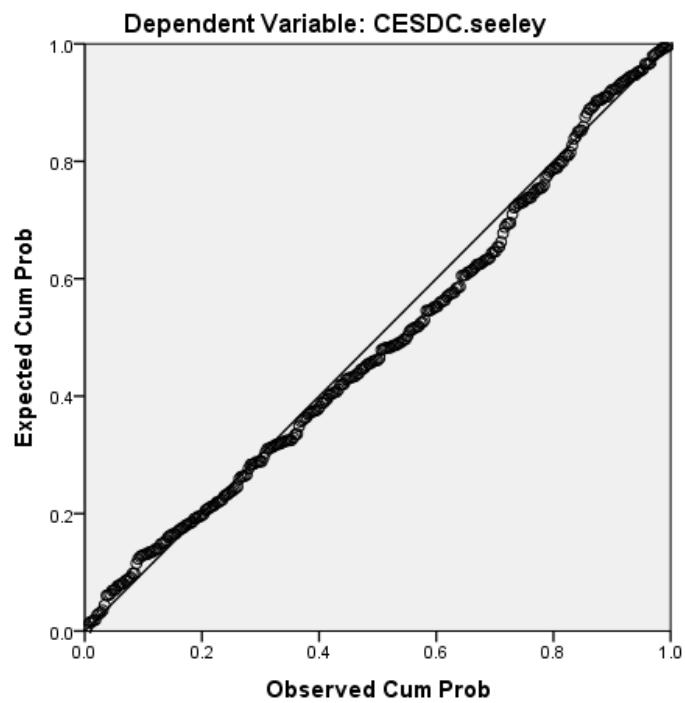


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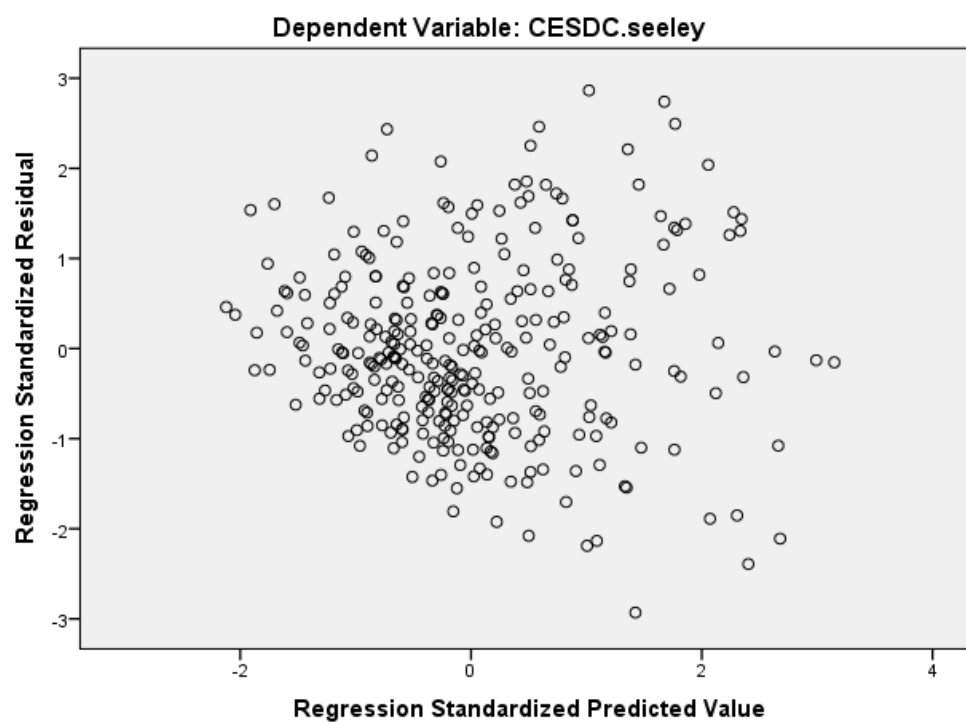


d. Depressive symptoms and cognitive variables

Normal P-P Plot of Regression Standardized Residual

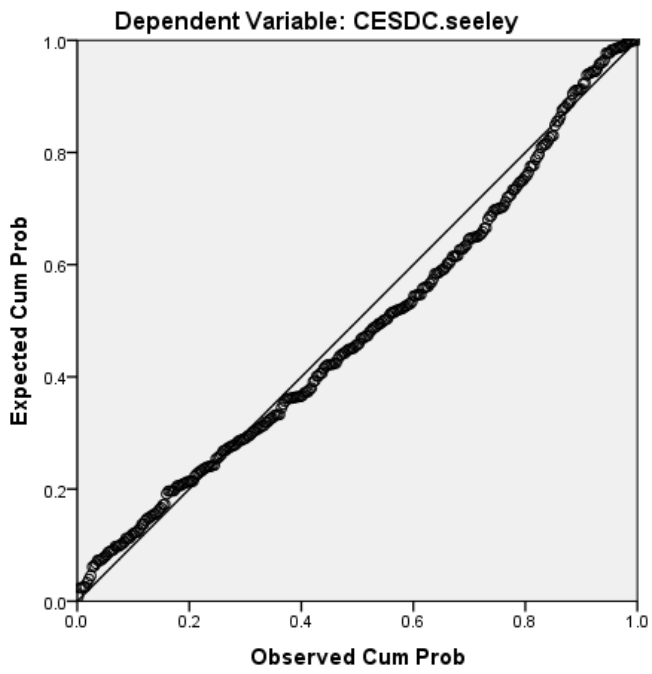


Scatterplot

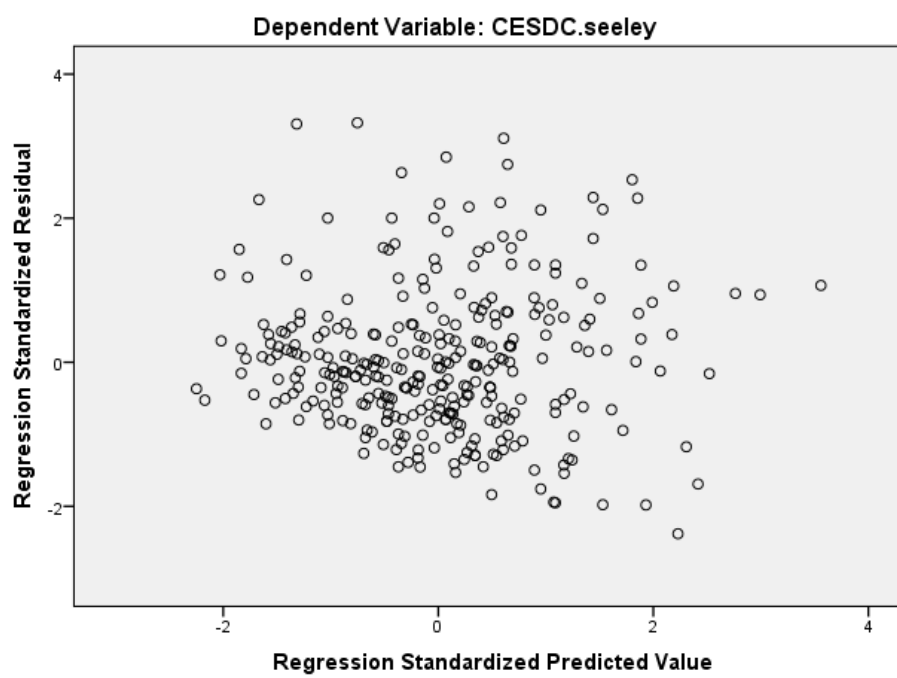


e. Depressive symptoms and gratitude

Normal P-P Plot of Regression Standardized Residual

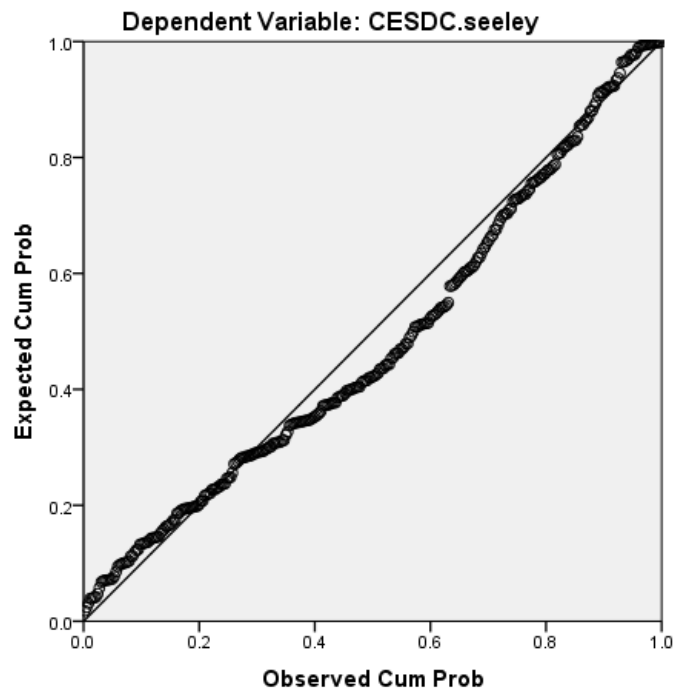


Scatterplot

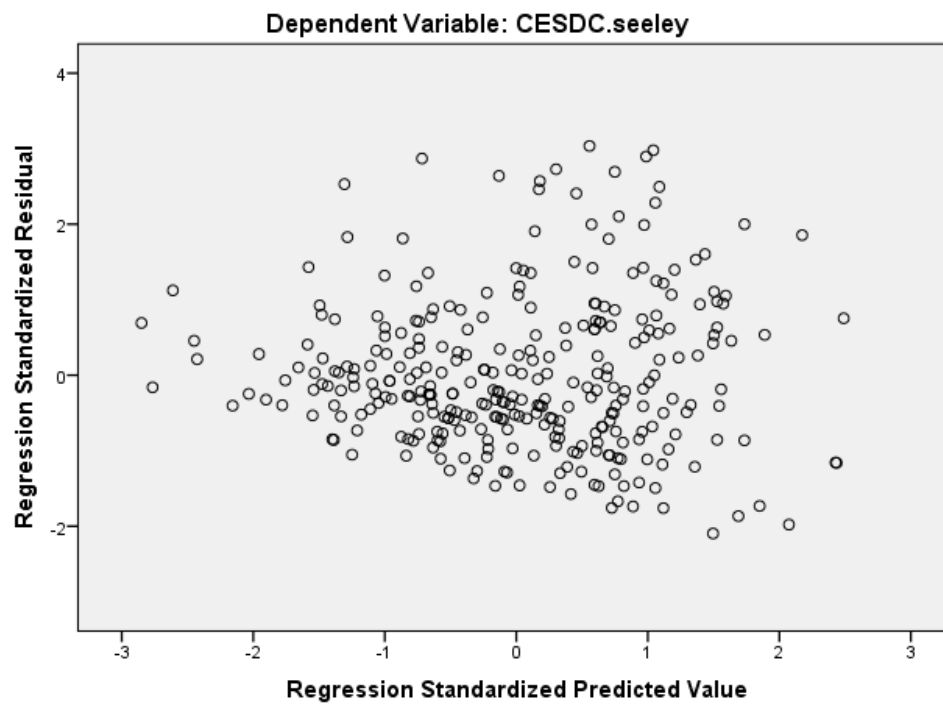


f. Depressive symptoms and mindfulness

Normal P-P Plot of Regression Standardized Residual



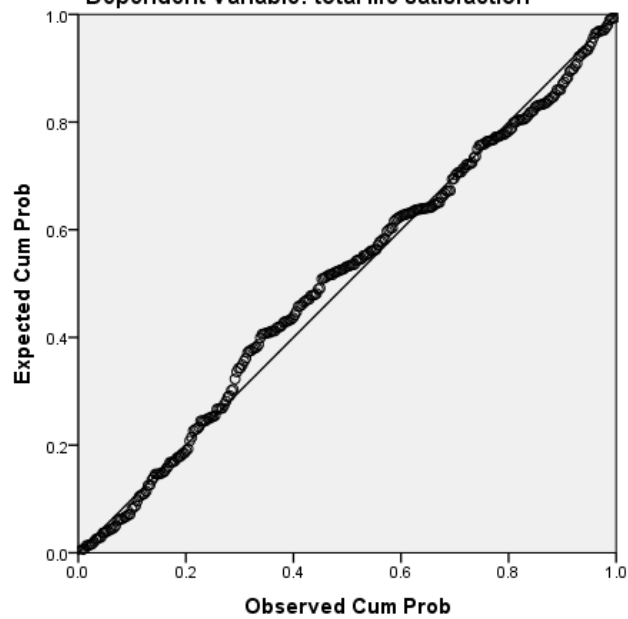
Scatterplot



g. Life satisfaction and cognitive variables

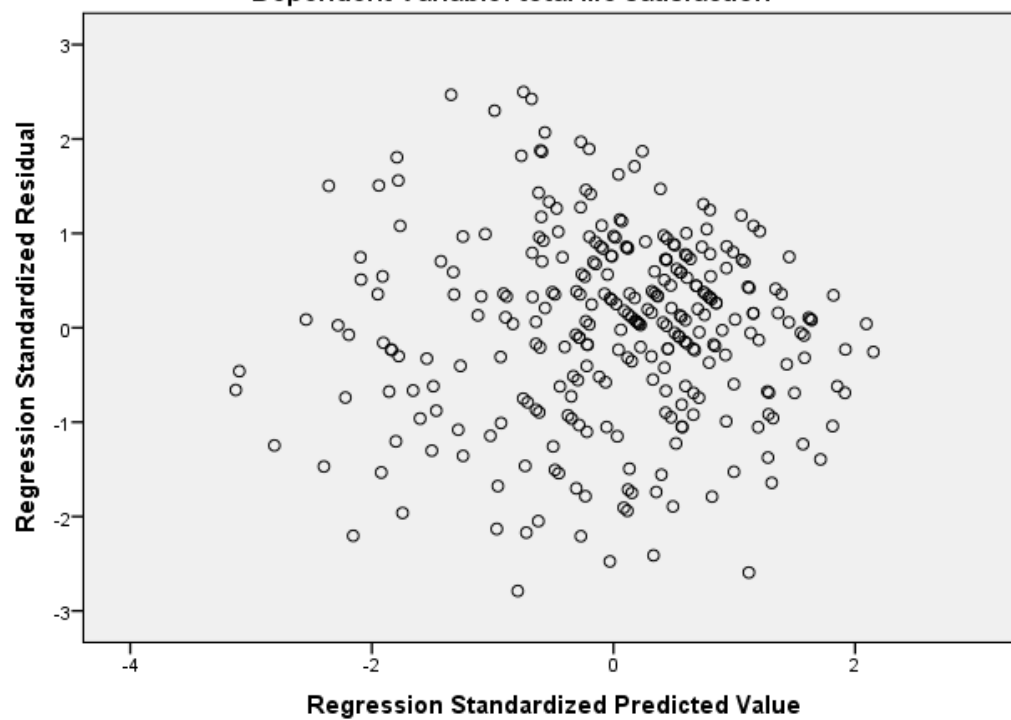
Normal P-P Plot of Regression Standardized Residual

Dependent Variable: total life satisfaction



Scatterplot

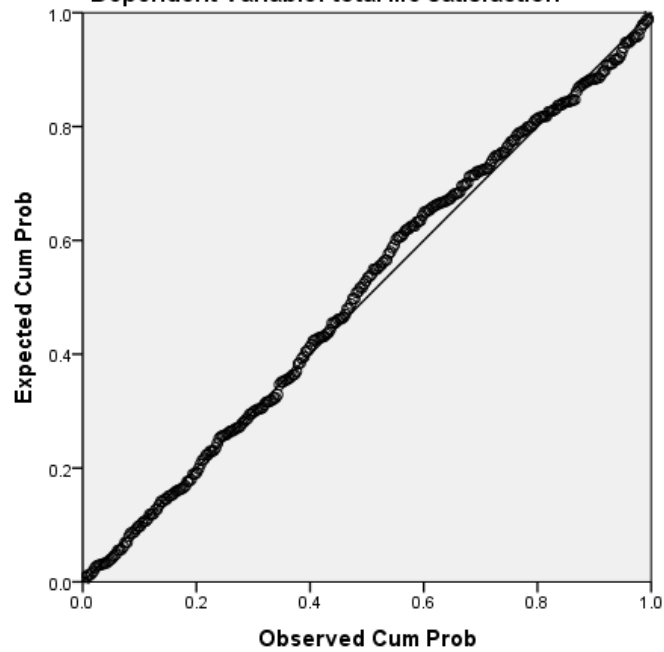
Dependent Variable: total life satisfaction



h. Life satisfaction and gratitude

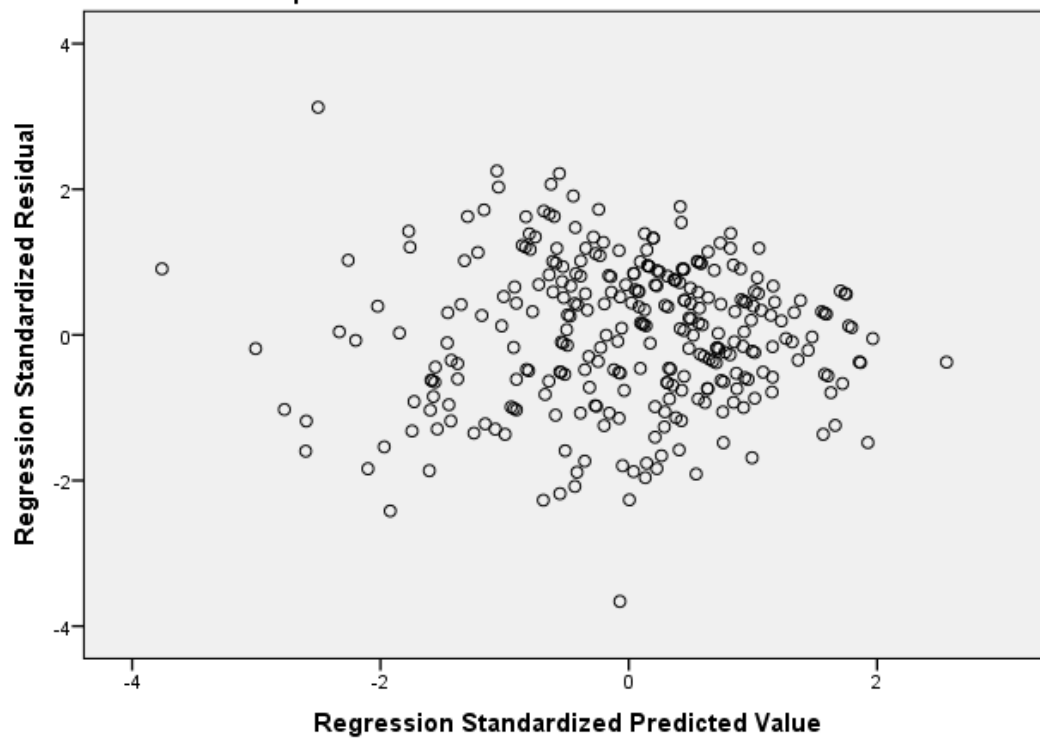
Normal P-P Plot of Regression Standardized Residual

Dependent Variable: total life satisfaction



Scatterplot

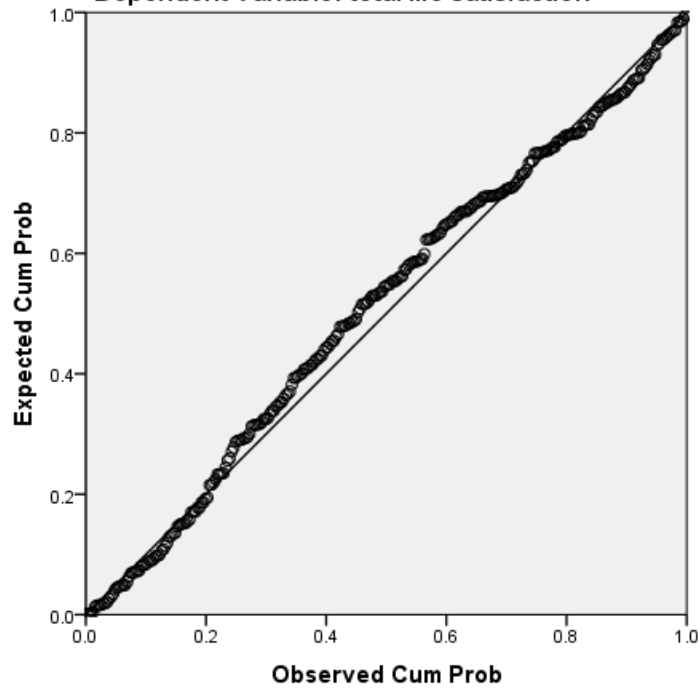
Dependent Variable: total life satisfaction



i. Life satisfaction and mindfulness

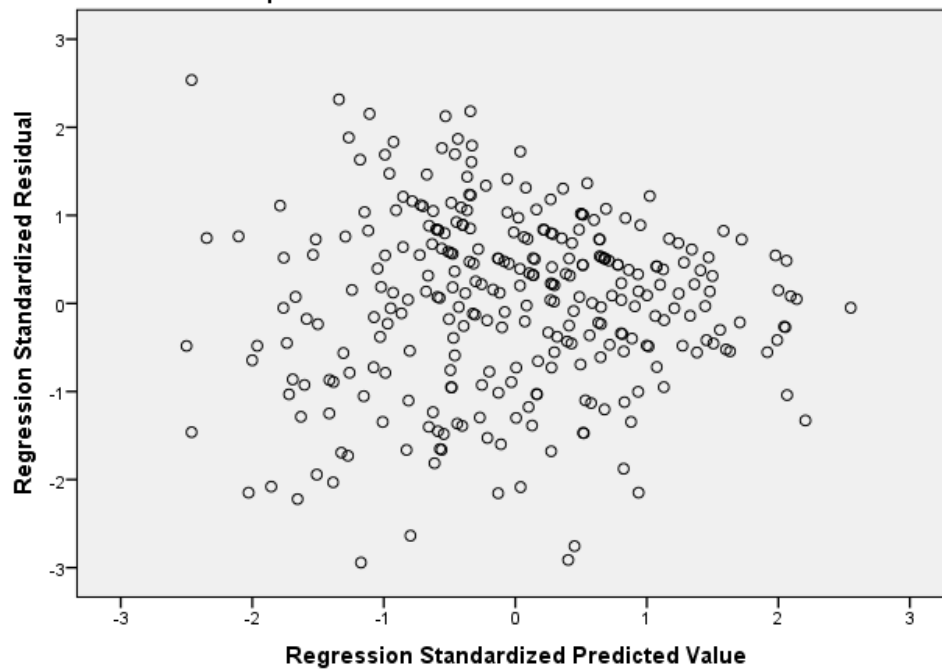
Normal P-P Plot of Regression Standardized Residual

Dependent Variable: total life satisfaction



Scatterplot

Dependent Variable: total life satisfaction



APPENDIX 10 - Consent form for Principals (Intervention studies)

School of Applied Psychology,
UCC Enterprise Centre,
North Mall,
Cork city.

Please read the following information and sign at the bottom of the page if you consent to your school participating in this research.

I _____ have read the relevant information and been informed as to the nature of this research project, and any queries I raised were answered to my satisfaction.

Therefore, I give my permission for Transition Year students at _____ to participate in this research. I understand that research data gathered may be published, but that this information will be presented in such a manner as to ensure that neither the school or the pupils will be identifiable.

I understand that this research requires participants to in the first instance complete a number of questionnaires related to well-being, as well as a form on demographics. Participants in the active condition will then take part in the intervention, while the other half of the group will not receive the intervention, but will be used for comparison purposes. At the end of the four-session intervention, the full group will once again complete a short batch of questionnaires, and will do so once more, in September 2013, at the start of the next academic year.

School principal signature _____

School _____

Date _____

APPENDIX 11 - Consent form for Participants (Interventions)

School of Applied Psychology,
UCC Enterprise Centre,
North Mall,
Cork city.

**Unique identifier (last four digits of
participant's mobile phone number) :**

I _____ agree to participate in Mark Barry's research study.

The purpose of the study has been explained to me and I understand it.

I am participating voluntarily.

I understand that I can withdraw from the study, without repercussions, at any time whether before it starts or while I am participating.

I understand I can withdraw my permission to use the data within two weeks of the study, in which case the material I have provided will be deleted. I understand that anonymity will be preserved in the write-up.

Signed _____ Date: _____

APPENDIX 12 - Information sheet for participants (CBC)

Purpose of the Study. As part of the requirements for a PhD in Applied Psychology at UCC, I have to carry out a research study. The study is concerned with the experience of well-being in adolescence.

What will the study involve? In the first instance, the study will involve participants completing a short batch of questionnaires. Participants will then be split into two groups on random lines. One half of those participating will be in the active condition and will take part in a cognitive behavioural group coaching intervention programme, while the other half will be assigned to a control condition for comparison purposes, and will not receive the intervention. The intervention will be delivered over four sessions to be scheduled during school hours, each session to be assigned a single period of class time. At the conclusion of the intervention programme, the full group will again complete a short batch of questionnaires, with these questionnaires again to be taken in September 2013, at the beginning of the following academic year.

Why have you been asked to take part? You have been asked because Transition Year has been judged to be the most appropriate group of students for this research, both in terms of age and accessibility.

Do you have to take part? Participation is voluntary. Because Transition Year students are under 18 years of age, parental consent is required. If either you or your parent/guardian decides against participation, then it is your right to do so. In

the event that consent is forthcoming, a consent form will be signed, and you will keep a copy of that form along with this information sheet. You can withdraw consent at any time up to two weeks after completing the study.

Will your participation in the study be kept confidential? Yes. I will ensure that no clues to your identity appear in the thesis, so all participants will remain anonymous.

What will happen to the information which you give? The data will be kept confidential for the duration of the study. On completion of the thesis, the data will be retained for a further six months and then destroyed.

What will happen to the results? The results will be presented in my thesis. They will be seen by my supervisor, a second marker and the external examiner. The thesis may be read by future students on the course. The study may be published in an academic journal.

What are the possible disadvantages of taking part? I don't envisage any negative consequences for you in taking part.

Who has reviewed this study? Approval must be given by the UCC School of Applied Psychology Ethics Committee before studies like this can take place, and this approval has been granted to this study.

Any further queries? If you need any further information, you can contact me via email: mark.a.barry@umail.ucc.ie.

APPENDIX 13 - Consent form for Parents (Cognitive Behavioural Coaching)

School of Applied Psychology,
UCC Enterprise Centre,
North Mall,
Cork city.

**Unique identifier (last four digits of
participant's mobile phone number) :**

Dear Parent/Guardian,

I am writing to request your permission for your son/daughter to participate in research looking at the effectiveness of a number of different interventions designed to increase well-being in adolescents.

This research is being carried out at three schools, with each hosting one of the following three interventions – mindfulness, gratitude, and cognitive behavioural group coaching. The school which your son/daughter is attending has agreed to host the cognitive behavioural group coaching intervention.

This intervention will be led by a qualified practitioner, and will focus on highlighting negative, self-defeating thought processes and also presenting alternative ways to look at life events, with a view towards fostering a more positive style of thinking, and equipping participants with improved life coping skills. There is a growing body of research which indicates that this type of intervention can be beneficial for adolescents.

This research is being conducted as part of a wider PhD research project, which is concerned with adolescent well-being, and also included a survey which was conducted in this school in late 2012. It is hoped that all eligible Transition Year students will take part in the

intervention phase, but it is up to every parent/guardian to give their consent or choose not to do so.

This study is taking place against the backdrop of research findings which suggest that mental health problems are common amongst Irish adolescents, and it is hoped that the findings of this PhD thesis will contribute to the ongoing debate about how best to foster well-being and encourage mental health among young people in this country.

What does this involve?

Participating pupils will be asked to complete a series of questionnaires related to well-being. They will then be divided into two groups along random lines, with one group receiving the intervention and the other being used primarily for comparison purposes. The cognitive behavioural group coaching intervention will be delivered over four sessions to be scheduled during school hours, each session to be assigned a single period of class time. At the conclusion of the intervention programme, the full group will again complete a short batch of questionnaires, with these questionnaires again to be taken in September 2013, at the beginning of the following academic year.

Is participation compulsory?

No. Participation is completely voluntary and dependent upon you giving consent by signing this document and your son/daughter returning it to their school.

What will happen to the data gathered after completion?

All answers/data provided by participants will be typed into a computer by the researcher. The physical documents will be securely stored at UCC's School of Applied Psychology. The data will be analysed by Mark Barry on a secure computer in UCC. No identifying information will be recorded, meaning the anonymity of all participating individuals is

guaranteed. The findings will be published in the researcher's PhD thesis, but no individual will be identified.

Who is the researcher?

My name is Mark Barry, and I am a PhD student at the School of Applied Psychology, UCC.

If I have any questions, how do I contact the researcher?

I can be contacted via email – mark.a.barry@umail.ucc.ie – or by phone on 087 9274086.

Yours sincerely,

Mark Barry

I give my consent for my son/daughter to take part in this survey research.

Parent/Guardian signature _____

APPENDIX 14 – INTERVENTION QUESTIONNAIRES



UCC Adolescent Well-Being Research Project

page 1

Thank you for agreeing to participate in the University College Cork Well-Being Research Project, which is being conducted through UCC School of Applied Psychology. As part of this ongoing research, participants are asked to complete the three questionnaires attached here.

First, please provide the basic demographic information requested below.

Unique identifier

While anonymity is guaranteed, the researcher needs to group each individual's survey answers together. With that in mind, it is necessary that you provide a unique identifier. If you have a mobile phone, please provide the last four digits in the space below. If you do not have a mobile phone, please provide the last four digits of your home landline telephone. _____

1. Age

How old are you? _____

2. Sex/Gender

What is your sex? (tick the box by the applicable description)

Male ☐

Female ☐

3. Race/ethnicity

How would you describe your ethnicity? (tick the box by the applicable description)

White or white Irish ☐

Irish traveller ☐

Any other white background ☐

Black or black Irish; African ☐

Any other black background ☐

Asian or Asian Irish; Chinese ☐

Any other Asian background ☐

Other, including mixed ethnic background ☐

Researcher contact information:
If you have any questions relating to this research subsequent to completing the survey, please feel free to contact the researcher via email: mark.a.barry@umail.ucc.ie

Questionnaire #1:

For each of the following statements and/or questions, please circle the point on the scale that you feel is most appropriate in describing you.

1. In general, I consider myself:

1	2	3	4	5	6	7
not a very happy person					a very happy person	

2. Compared to most of my peers, I consider myself:

1	2	3	4	5	6	7
less happy					more happy	

3. Some people are generally very happy. They enjoy life regardless of what is going on, getting the most out of everything. To what extent does this characterization describe you?

1	2	3	4	5	6	7
not at all					a great deal	

4. Some people are generally not very happy. Although they are not depressed, they never seem as happy as they might be. To what extent does this characterization describe you?

1	2	3	4	5	6	7
not at all					a great deal	

Questionnaire #2:

INSTRUCTIONS: Below is a list of the ways you might have felt or acted. Please check how *much* you have felt this way during the *past week*.

DURING THE PAST WEEK	Not At All	A Little	Some	A Lot
1. I was bothered by things that usually don't bother me.	_____	_____	_____	_____
2. I did not feel like eating, I wasn't very hungry.	_____	_____	_____	_____
3. I wasn't able to feel happy, even when my family or friends tried to help me feel better.	_____	_____	_____	_____
4. I felt like I was just as good as other kids.	_____	_____	_____	_____
5. I felt like I couldn't pay attention to what I was doing.	_____	_____	_____	_____

DURING THE PAST WEEK	Not At All	A Little	Some	A Lot
6. I felt down and unhappy.	_____	_____	_____	_____
7. I felt like I was too tired to do things.	_____	_____	_____	_____
8. I felt like something good was going to happen.	_____	_____	_____	_____
9. I felt like things I did before didn't work out right.	_____	_____	_____	_____
10. I felt scared.	_____	_____	_____	_____

DURING THE PAST WEEK	Not At All	A Little	Some	A Lot
11. I didn't sleep as well as I usually sleep.	_____	_____	_____	_____
12. I was happy.	_____	_____	_____	_____
13. I was more quiet than usual.	_____	_____	_____	_____
14. I felt lonely, like I didn't have any friends.	_____	_____	_____	_____
15. I felt like other teenagers I know were not friendly or that they didn't want to be with me.	_____	_____	_____	_____

DURING THE PAST WEEK	Not At All	A Little	Some	A Lot
16. I had a good time.	_____	_____	_____	_____
17. I felt like crying.	_____	_____	_____	_____
18. I felt sad.	_____	_____	_____	_____
19. I felt people didn't like me.	_____	_____	_____	_____
20. It was hard to get started doing things.	_____	_____	_____	_____

Questionnaire #3:

DIRECTIONS: Below are five statements with which you may agree or disagree. Using the 1-7 scale below, indicate your agreement with each item by placing the appropriate number in the line preceding that item. Please be open and honest in your responding.

- 1 = Strongly Disagree
- 2 = Disagree
- 3 = Slightly Disagree
- 4 = Neither Agree or Disagree
- 5 = Slightly Agree
- 6 = Agree
- 7 = Strongly Agree

- _____ 1. In most ways my life is close to my ideal.
- _____ 2. The conditions of my life are excellent.
- _____ 3. I am satisfied with life.
- _____ 4. So far I have gotten the important things I want in life.
- _____ 5. If I could live my life over, I would change almost nothing.

PAGE TO BE REMOVED FOR YOUR REFERENCE

If completing these questionnaires has raised any anxieties for you and you would like the opportunity to talk about those concerns, there are a number of organisations specifically designed to offer support. Below are two groups you can contact if you feel the need.



SAMARITANS: 1850 60 90 90 or 021 4271323



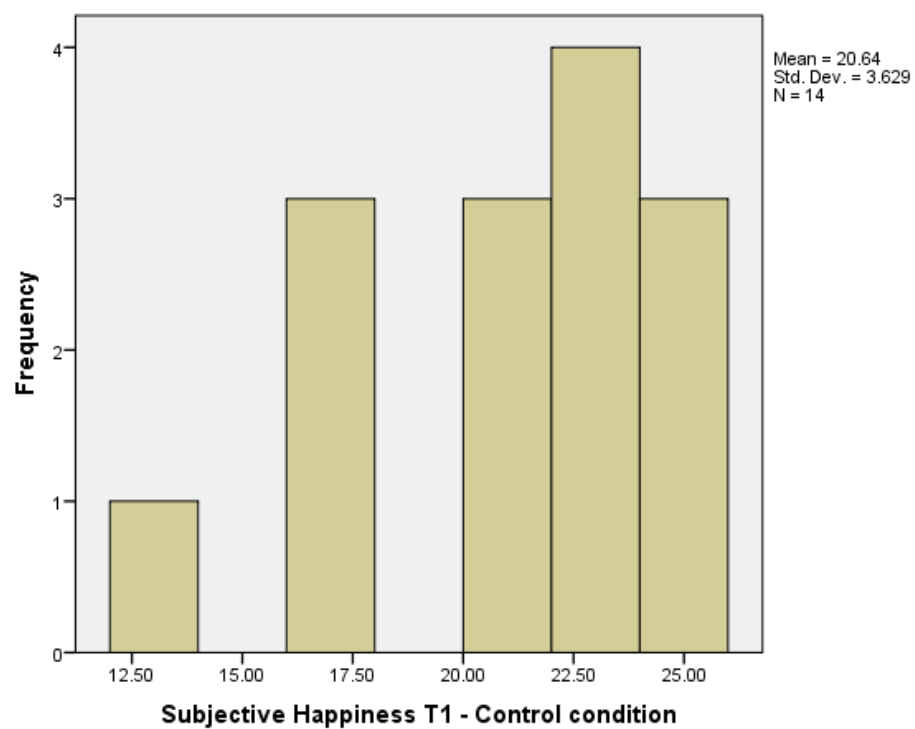
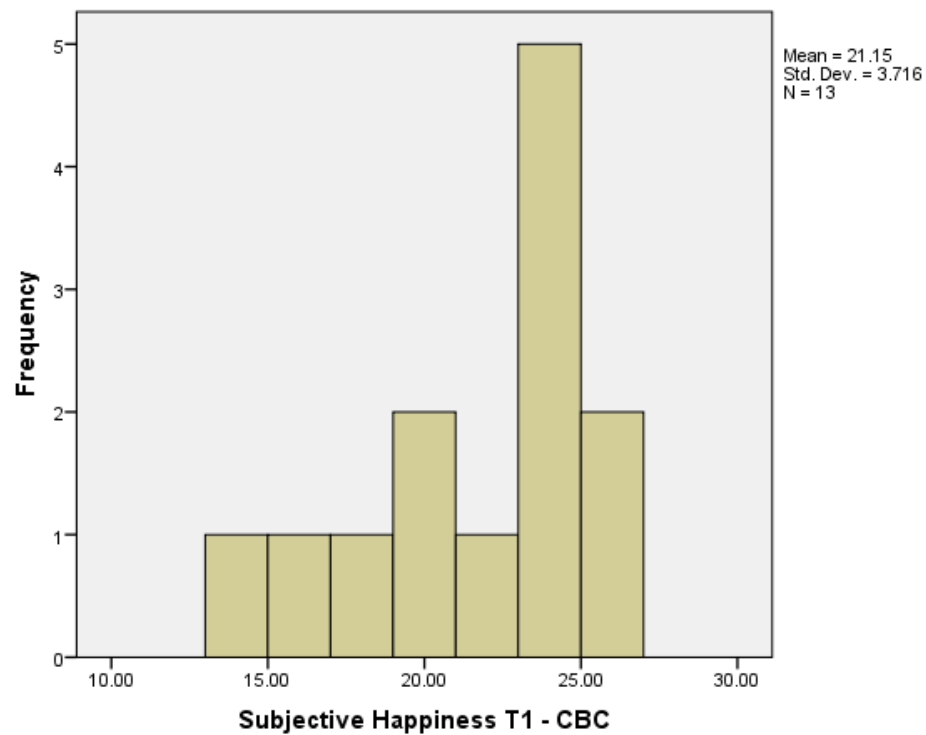
CHILDLINE: 1800 66 66 66

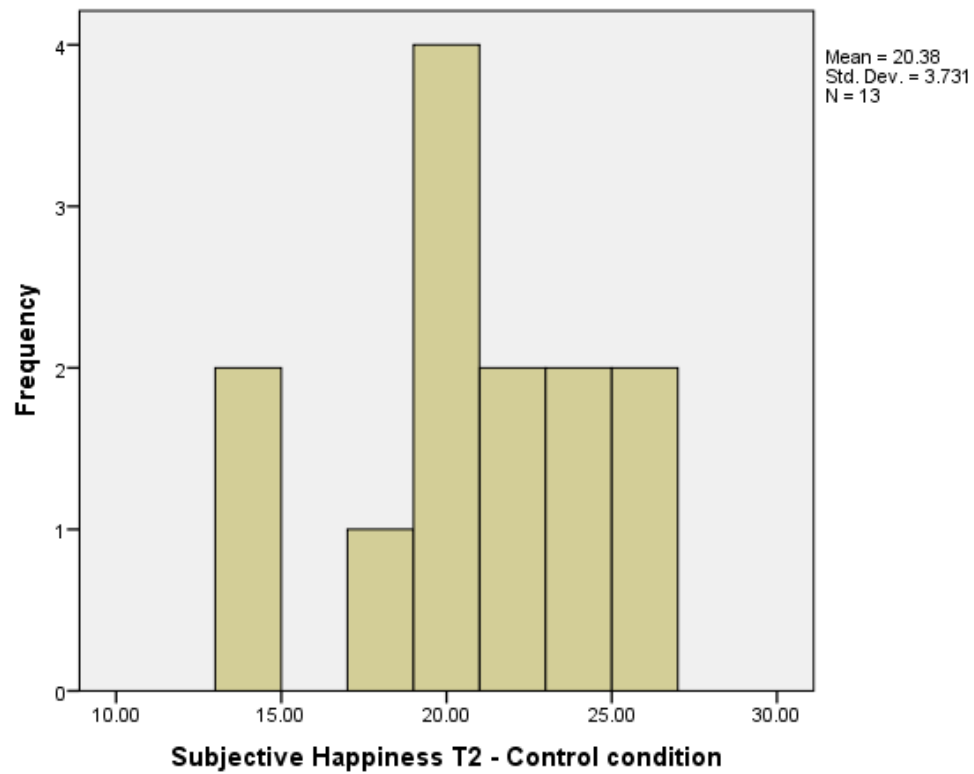
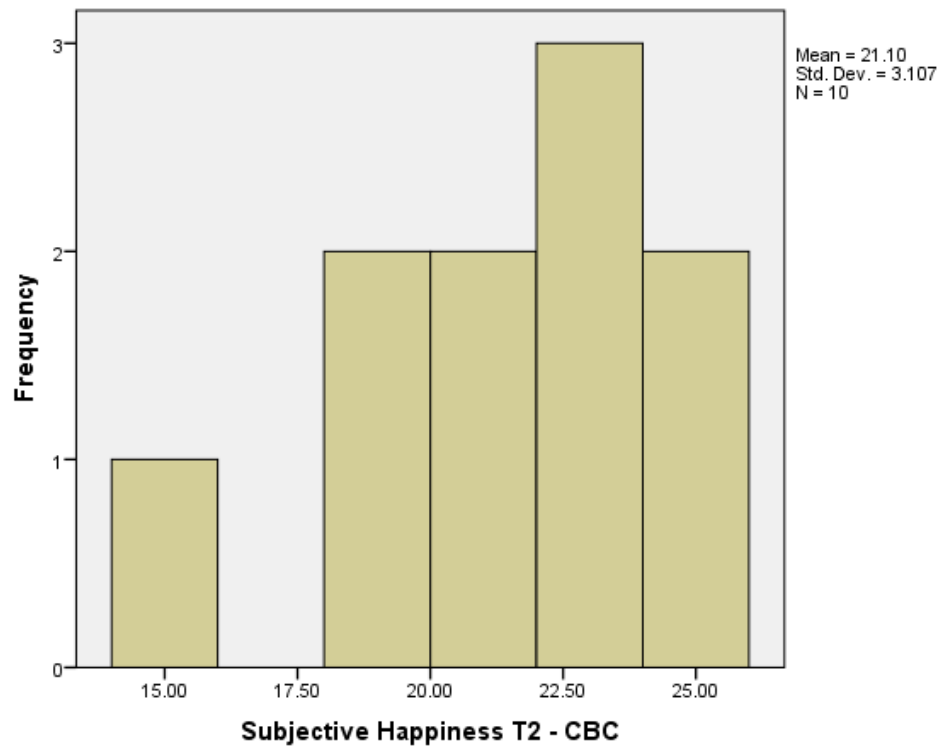
Alternatively, you may wish to discuss any issues highlighted for you by taking part in this research with the school guidance counsellor.

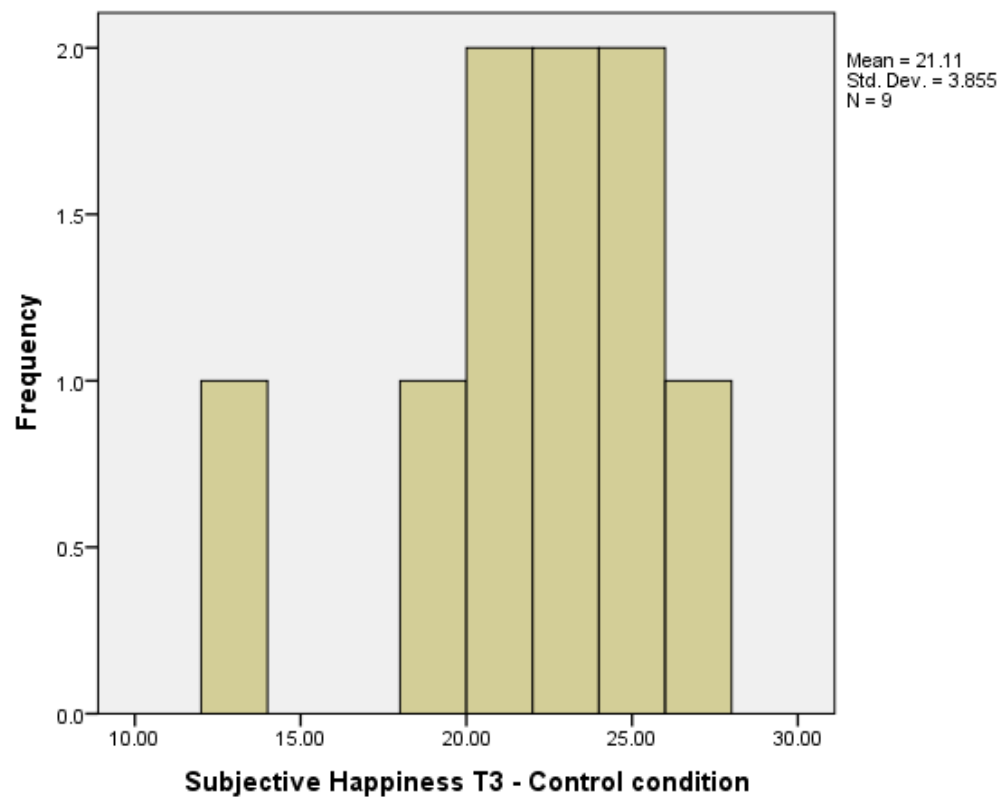
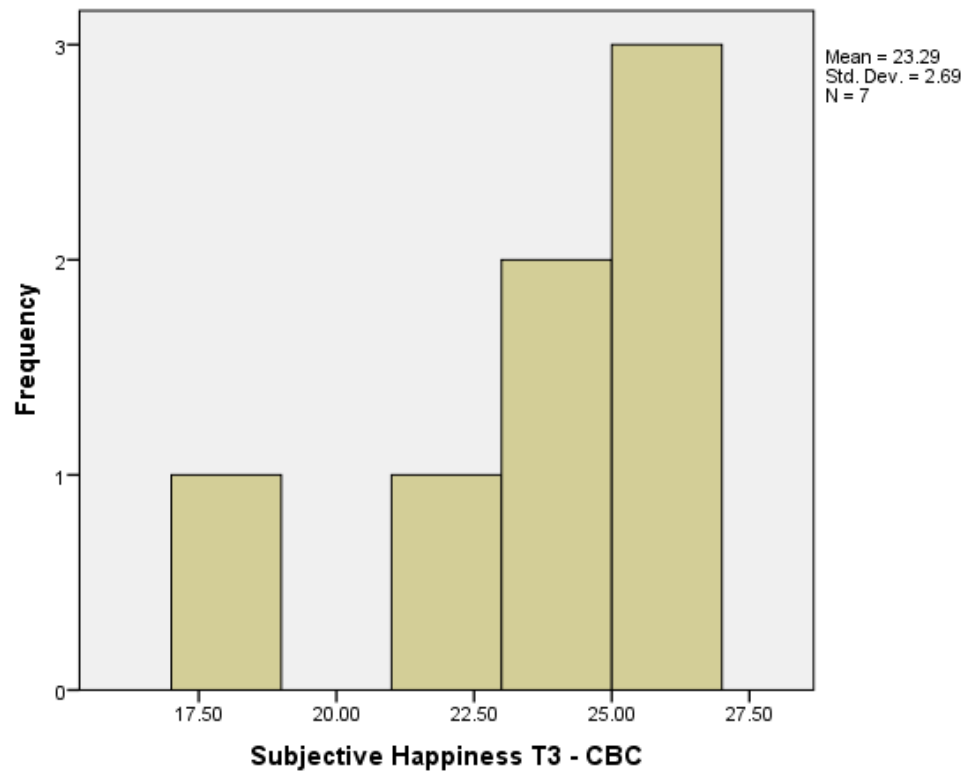
Researcher contact information:

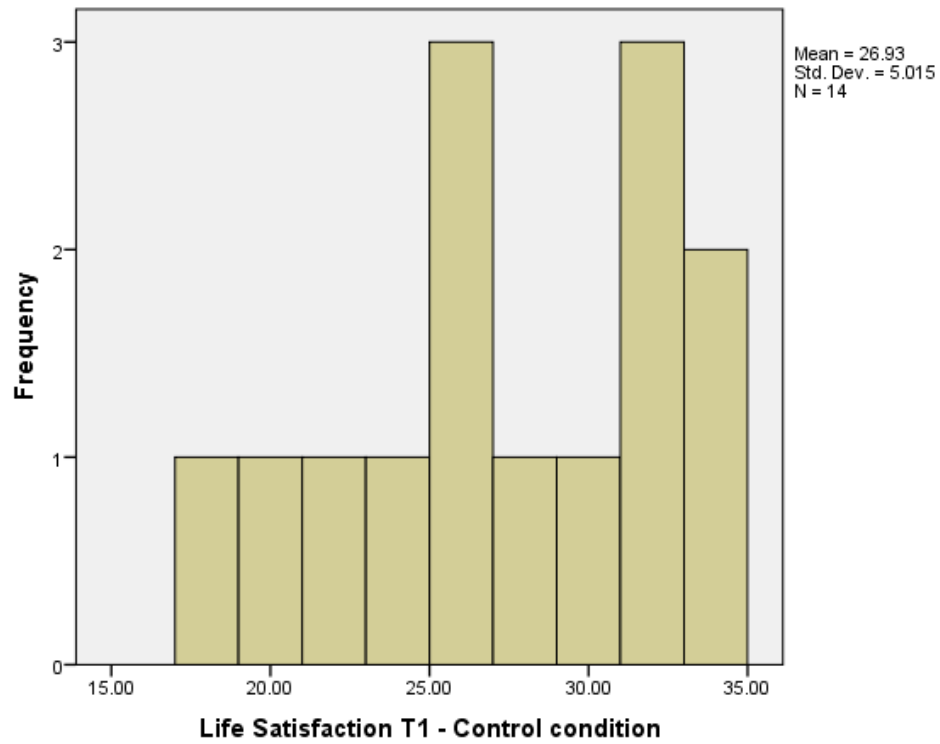
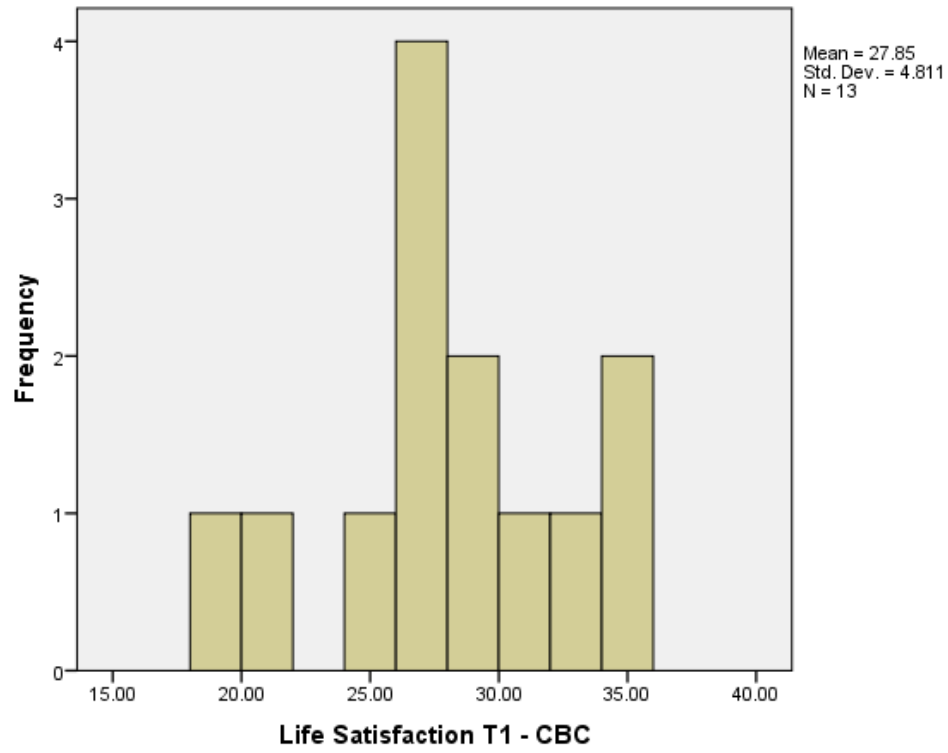
If you have any questions relating to this research subsequent to completing the survey, please feel free to contact the researcher via email: mark.a.barry@umail.ucc.ie

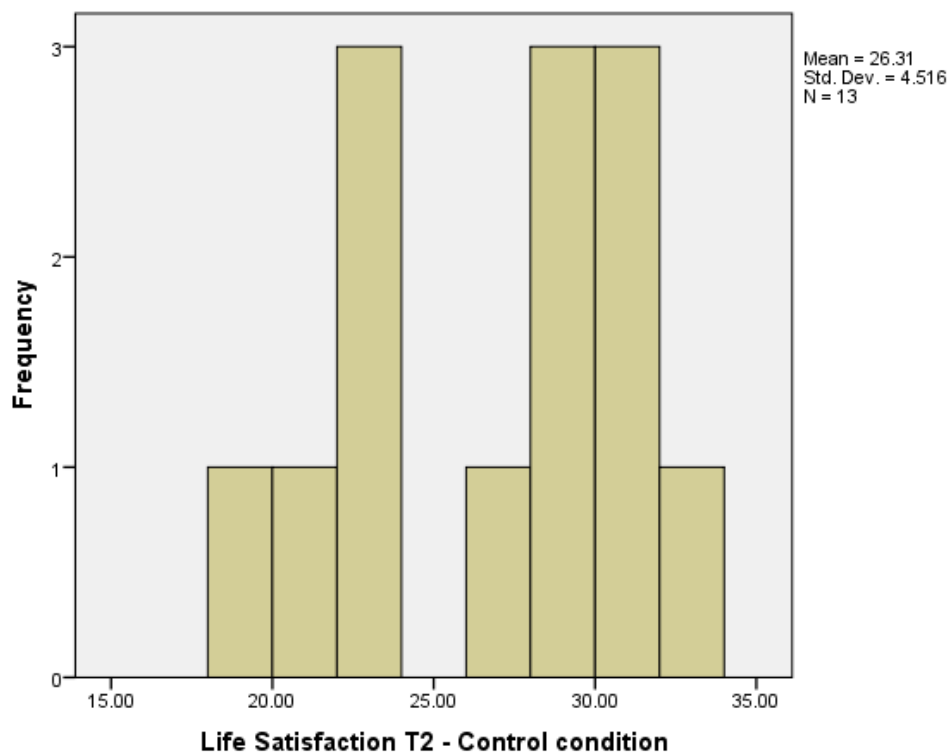
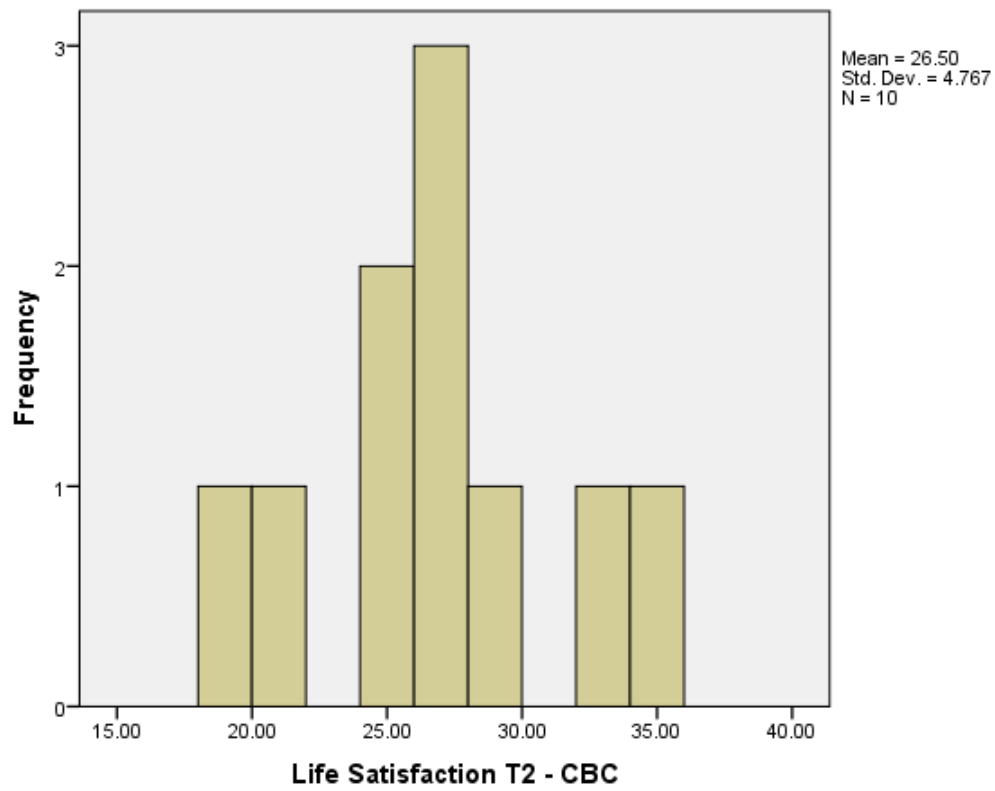
APPENDIX 15 - Histograms showing distribution for outcome variables (CBC)

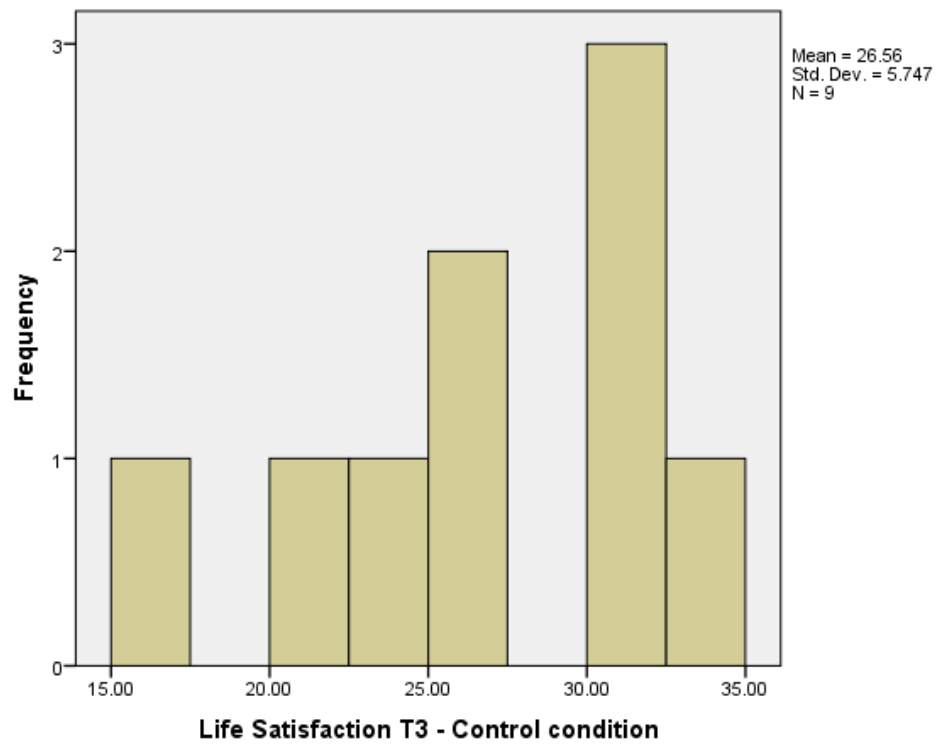
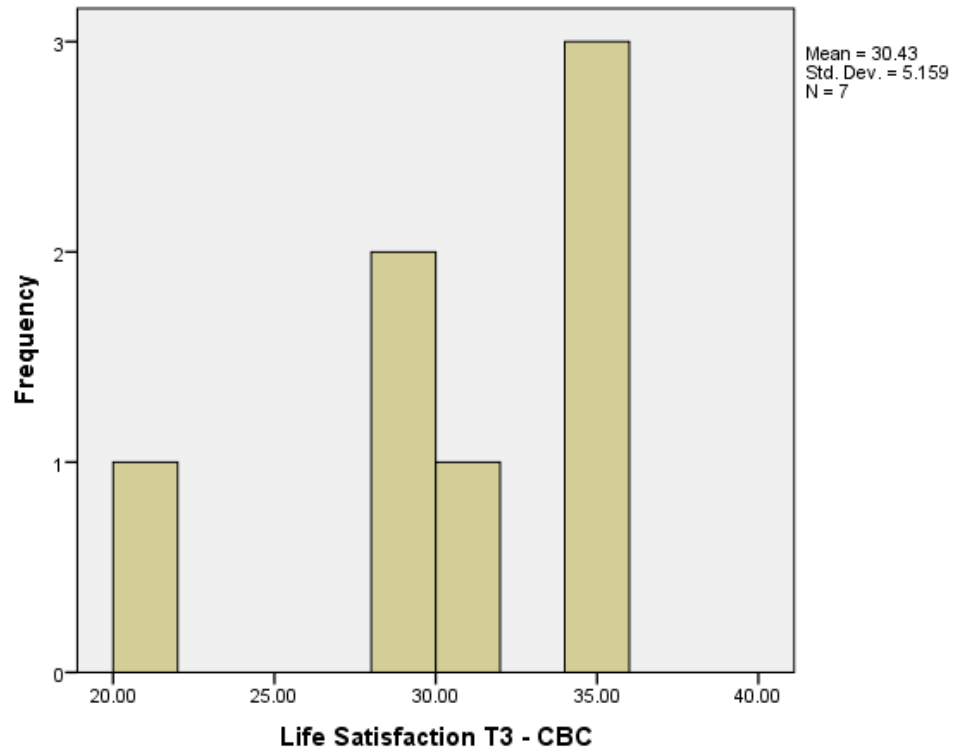


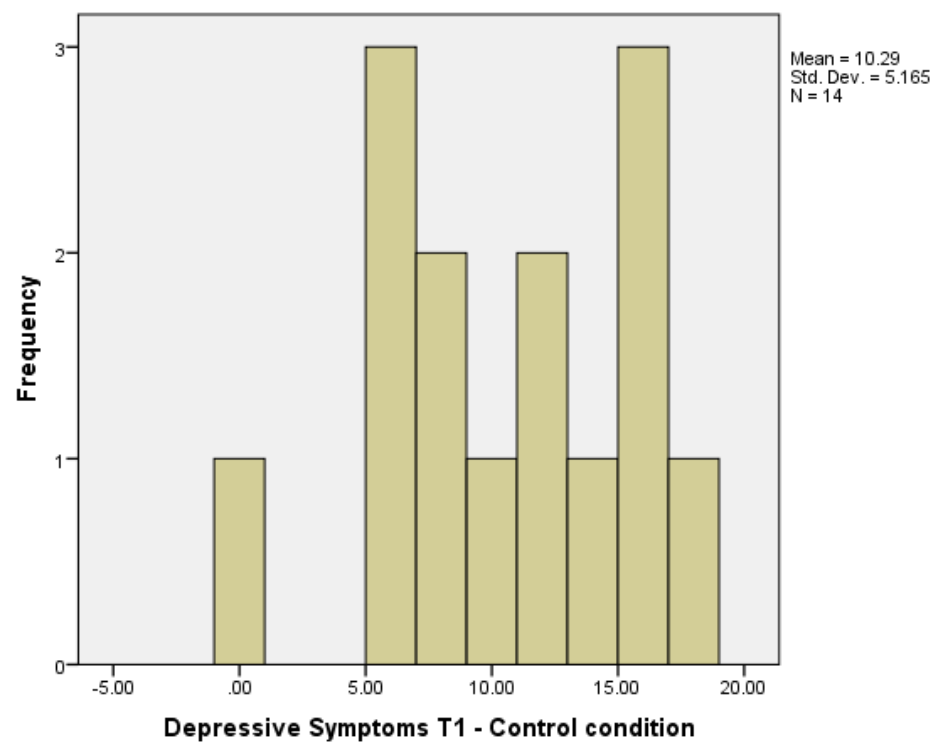
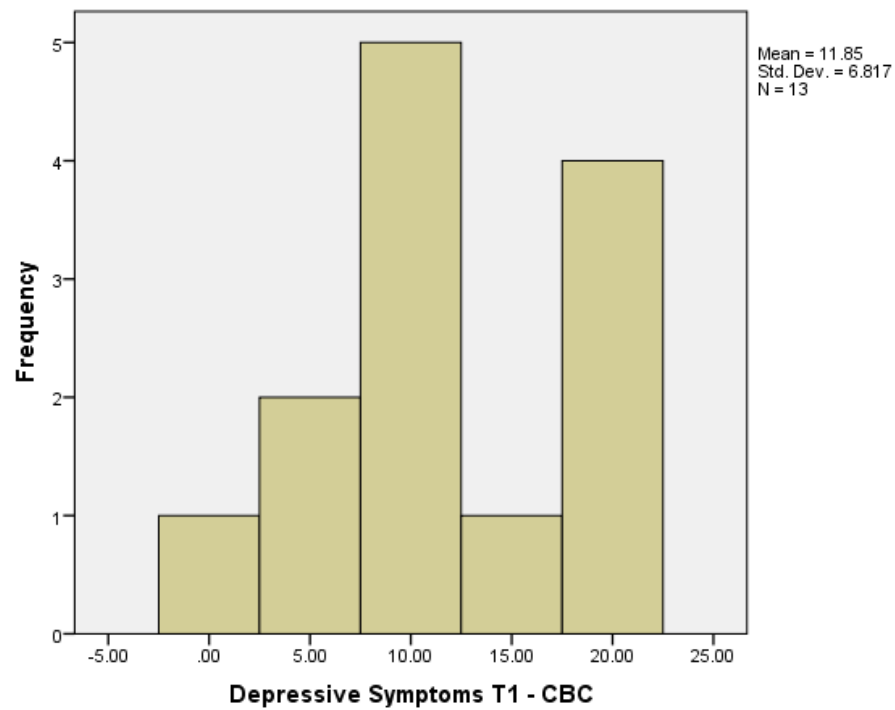


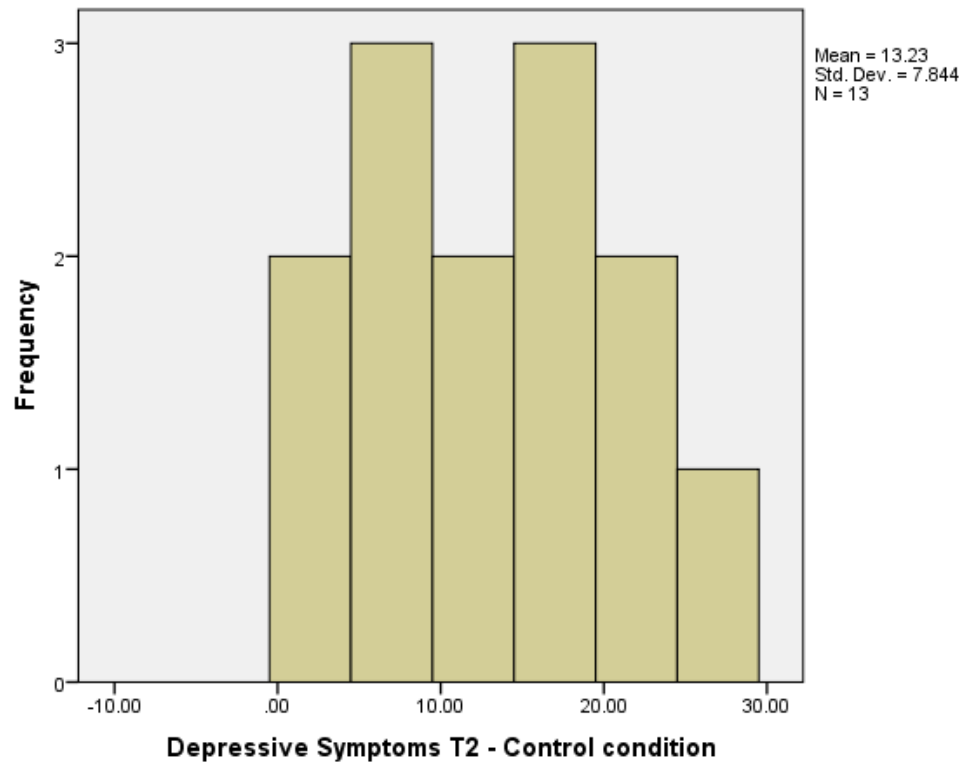
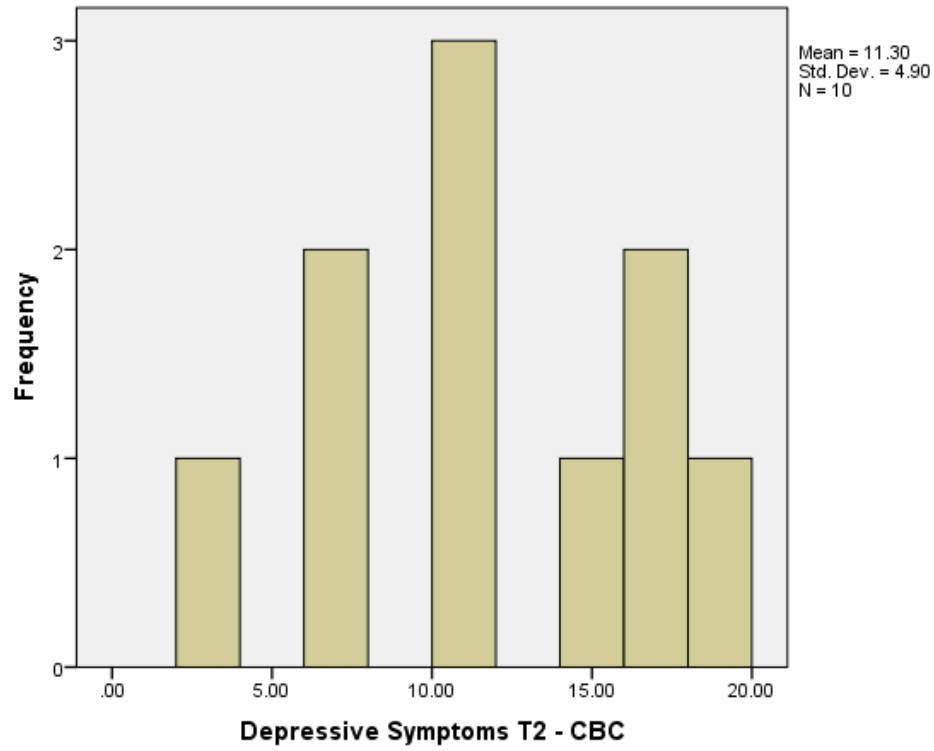


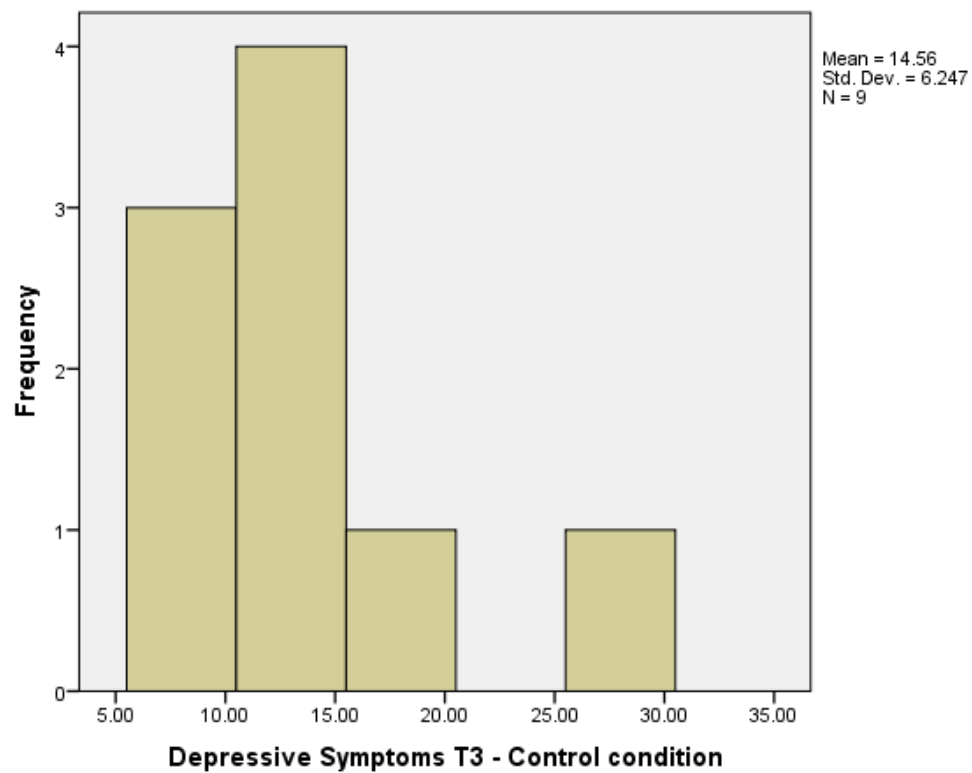
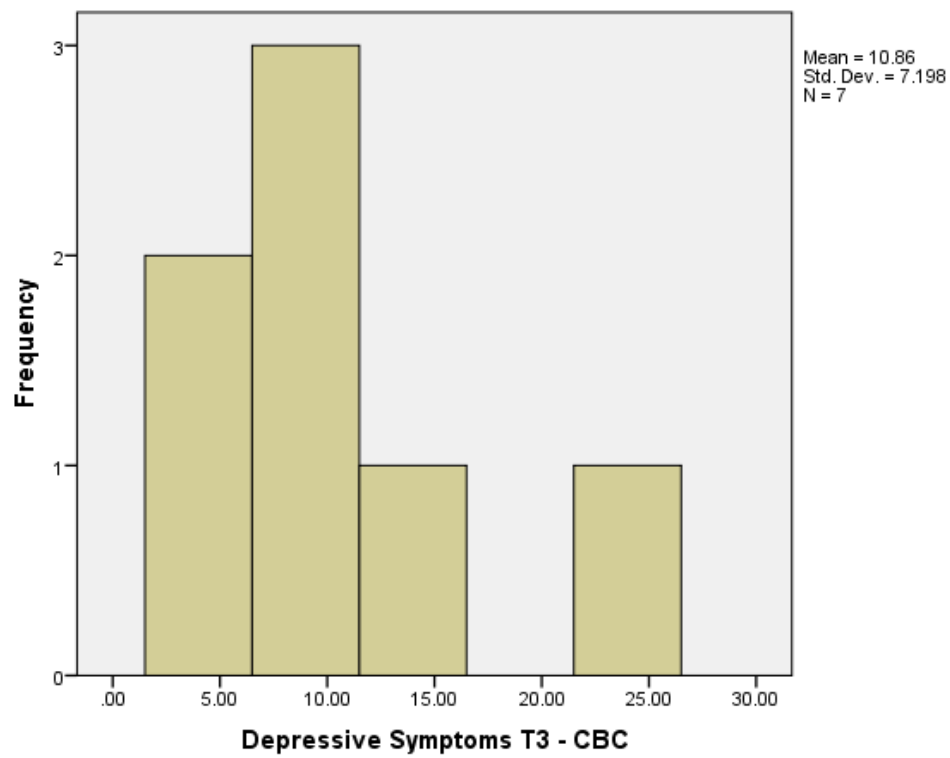












APPENDIX 16 - Information sheet for participants (Mindfulness)

Purpose of the Study. As part of the requirements for a PhD in Applied Psychology at UCC, I have to carry out a research study. The study is concerned with the experience of well-being in adolescence.

What will the study involve? In the first instance, the study will involve participants completing a short batch of questionnaires. Participants will then be split into two groups on random lines. One half of those participating will be in the active condition and will take part in a mindfulness intervention programme, while the other half will be assigned to a control condition for comparison purposes, and will not receive the intervention. The mindfulness intervention will be delivered over four sessions to be scheduled during school hours, each session to be assigned a single period of class time. At the conclusion of the intervention programme, the full group will again complete a short batch of questionnaires, with these questionnaires again to be taken in September 2013, at the beginning of the following academic year.

Why have you been asked to take part? You have been asked because Transition Year has been judged to be the most appropriate group of students for this research, both in terms of age and accessibility.

Do you have to take part? Participation is voluntary. Because Transition Year students are under 18 years of age, parental consent is required. If either you or your parent/guardian decides against participation, then it is your right to do so. In the event that consent is forthcoming, a consent form will be signed, and you will keep a copy of that form along with this information sheet. You can withdraw consent at any time up to two weeks after completing the study.

Will your participation in the study be kept confidential? Yes. I will ensure that no clues to your identity appear in the thesis, so all participants will remain anonymous.

What will happen to the information which you give? The data will be kept confidential for the duration of the study. On completion of the thesis, the data will be retained for a further six months and then destroyed.

What will happen to the results? The results will be presented in my thesis. They will be seen by my supervisor, a second marker and the external examiner. The thesis may be read by future students on the course. The study may be published in an academic journal.

What are the possible disadvantages of taking part? I don't envisage any negative consequences for you in taking part.

Who has reviewed this study? Approval must be given by the UCC School of Applied Psychology Ethics Committee before studies like this can take place, and this approval has been granted to this study.

Any further queries? If you need any further information, you can contact me via email: mark.a.barry@umail.ucc.ie.

APPENDIX 17 - Consent form for Parents (Mindfulness)

School of Applied Psychology,
UCC Enterprise Centre,
North Mall,
Cork city.

**Unique identifier (last four digits of
participant's mobile phone number) :**

Dear Parent/Guardian,

I am writing to request your permission for your son/daughter to participate in research looking at the effectiveness of a number of different interventions designed to increase well-being in adolescents.

This research is being carried out at three schools, with each hosting one of the following three interventions – mindfulness, gratitude, and cognitive behavioural group coaching. The school which your son/daughter is attending has agreed to host the mindfulness intervention.

The mindfulness intervention will be led by a qualified practitioner, and specifically designed for an adolescent group. It will be geared towards encouraging stress reduction and enhancing well-being in those taking part. There is a growing body of research which indicates that this type of intervention can be beneficial for adolescents.

This research is being conducted as part of a wider PhD research project, which is concerned with adolescent well-being, and also included a survey which was conducted in this school in late 2012. It is hoped that all eligible Transition Year students will take part in the intervention phase, but it is up to every parent/guardian to give their consent or choose not to do so.

This study is taking place against the backdrop of research findings which suggest that mental health problems are common amongst Irish adolescents, and it is hoped that the findings of this PhD thesis will contribute to the ongoing debate about how best to foster well-being and encourage mental health among young people in this country.

What does this involve?

Participating pupils will be asked to complete a series of questionnaires related to well-being. They will then be divided into two groups along random lines, with one group receiving the intervention and the other being used primarily for comparison purposes. The mindfulness intervention will be delivered over four sessions to be scheduled during school hours, each session to be assigned a single period of class time. At the conclusion of the intervention programme, the full group will again complete a short batch of questionnaires, with these questionnaires again to be taken in September 2013, at the beginning of the following academic year.

Is participation compulsory?

No. Participation is completely voluntary and dependent upon you giving consent by signing this document and your son/daughter returning it to their school.

What will happen to the data gathered after completion?

All answers/data provided by participants will be typed into a computer by the researcher. The physical documents will be securely stored at UCC's School of Applied Psychology. The data will be analysed by Mark Barry on a secure computer in UCC. No identifying information will be recorded, meaning the anonymity of all participating individuals is guaranteed. The findings will be published in the researcher's PhD thesis, but no individual will be identified.

Who is the researcher?

My name is Mark Barry, and I am a PhD student at the School of Applied Psychology, UCC.

If I have any questions, how do I contact the researcher?

I can be contacted via email – mark.a.barry@umail.ucc.ie – or by phone on 087 9274086.

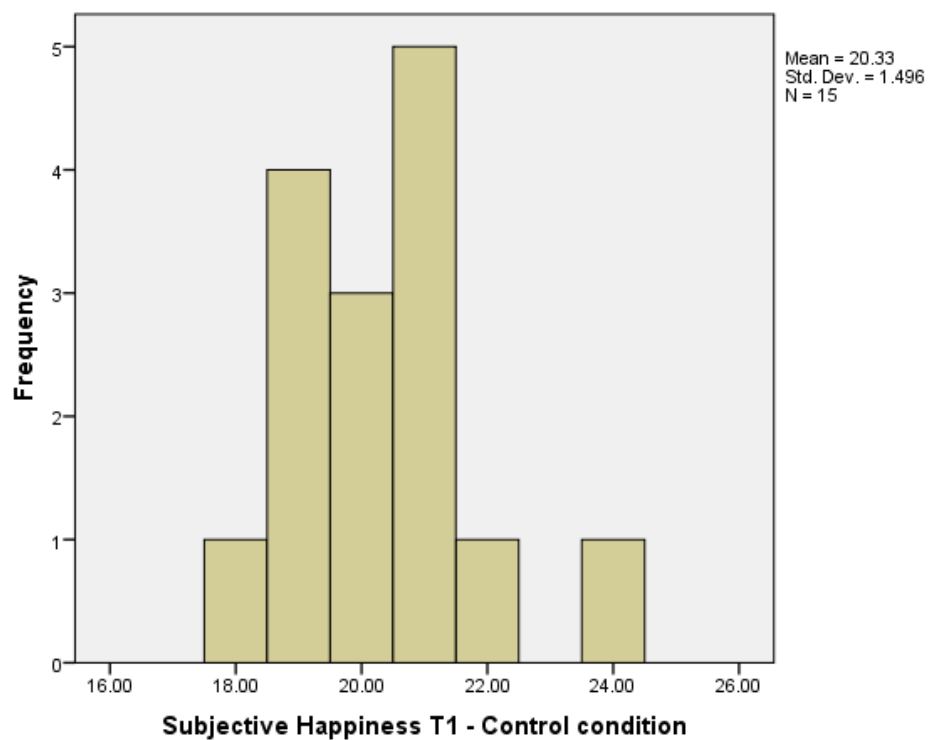
Yours sincerely,

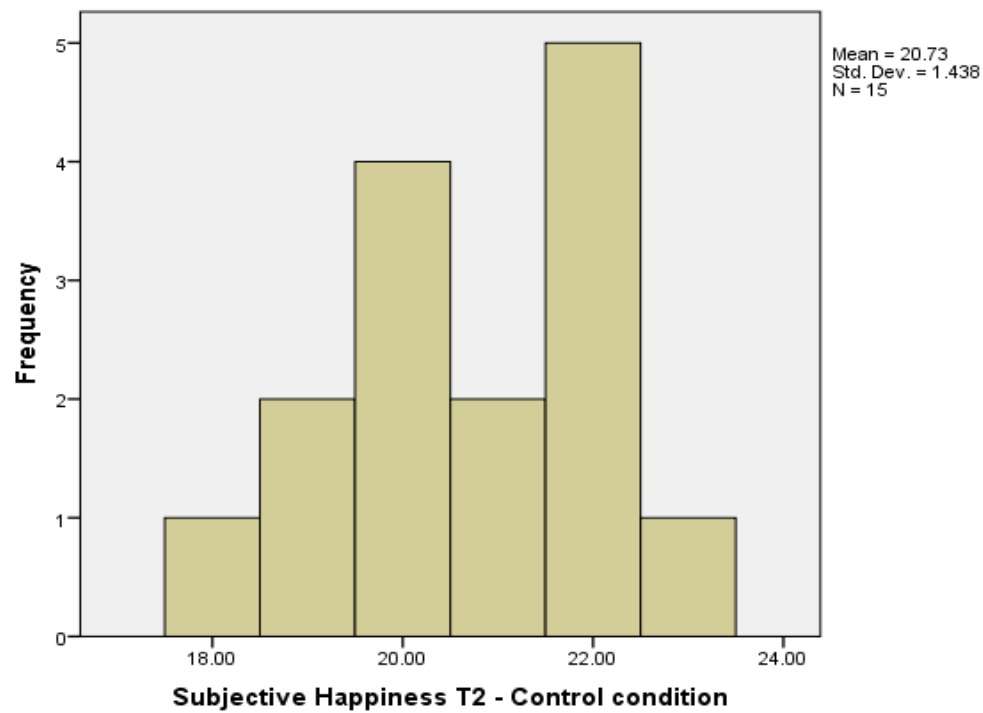
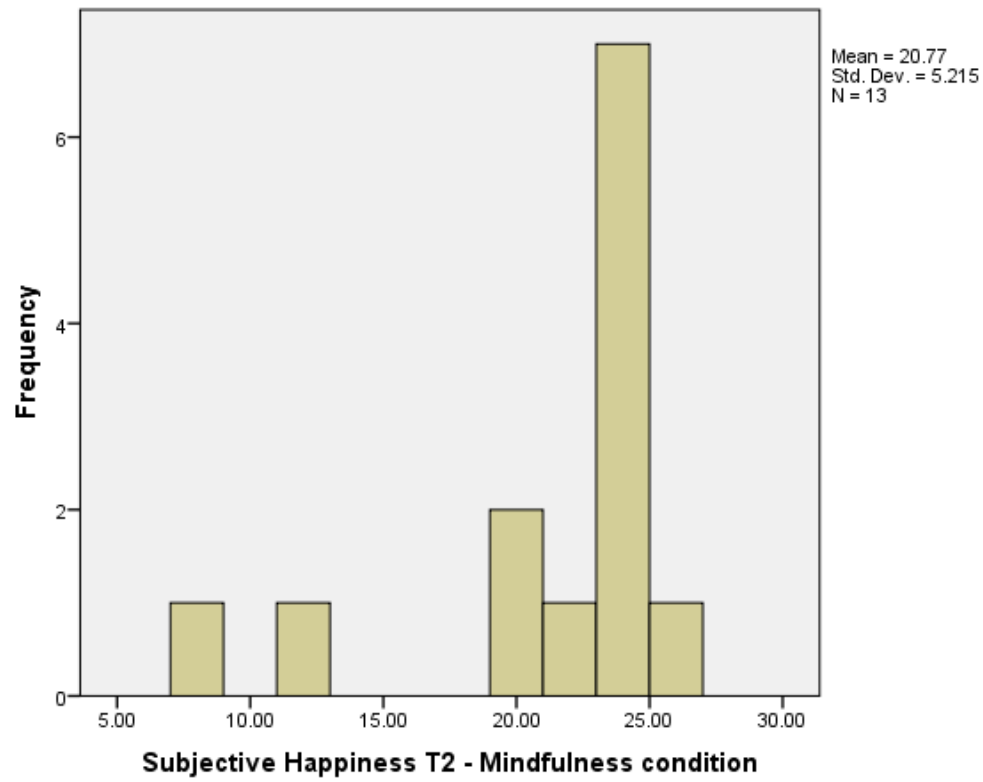
Mark Barry

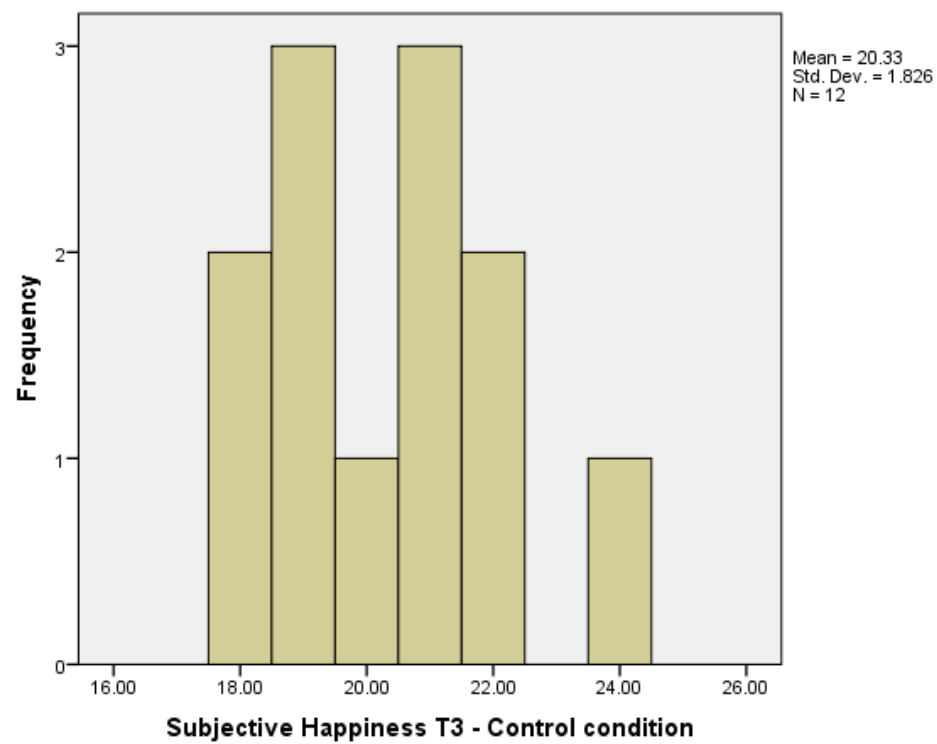
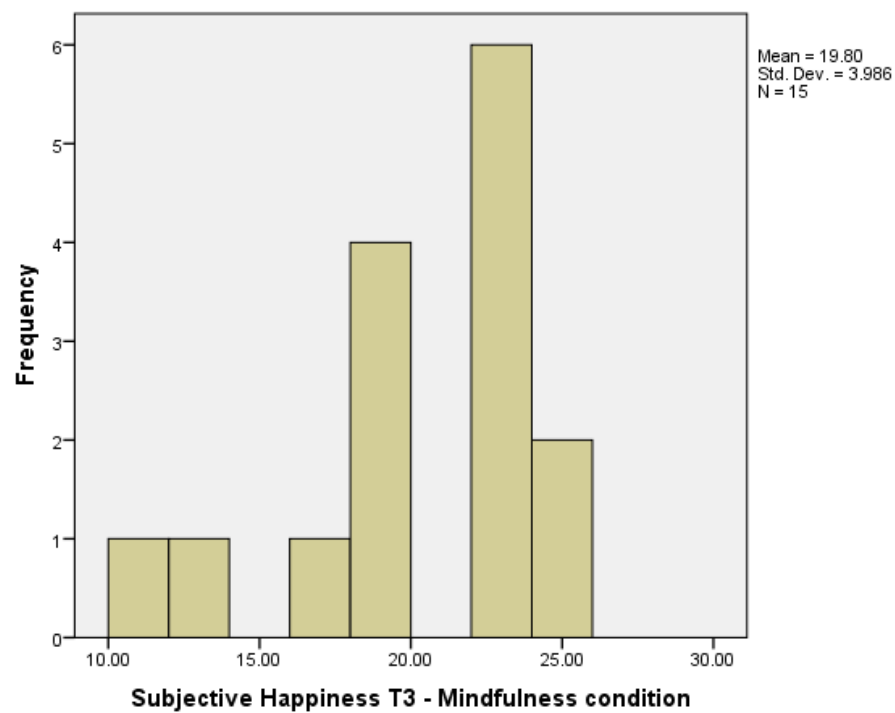
I give my consent for my son/daughter to take part in this survey research.

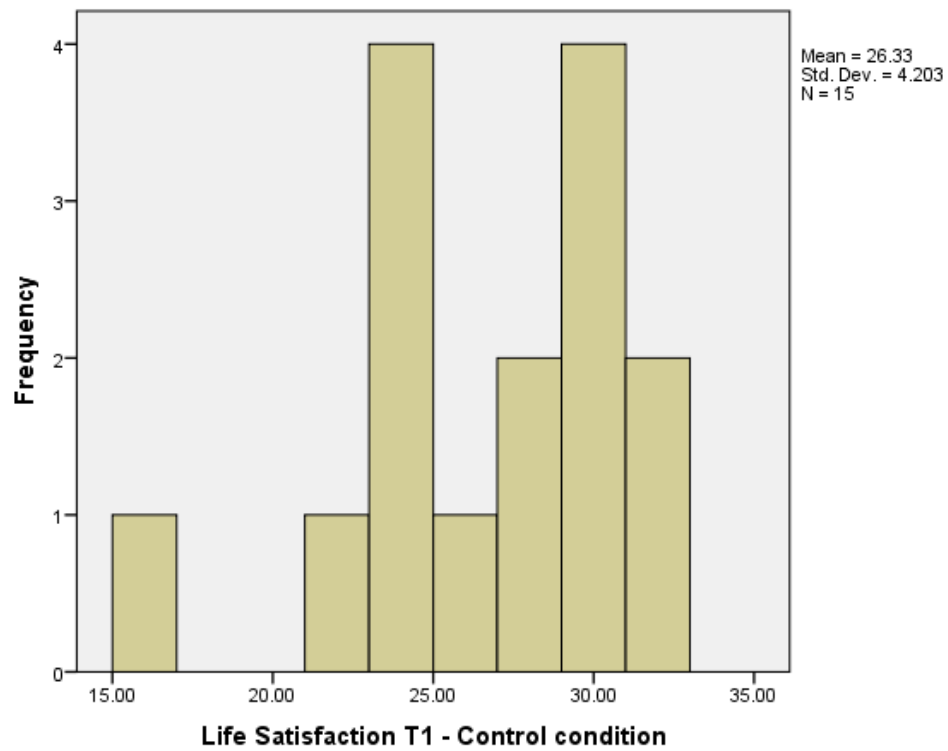
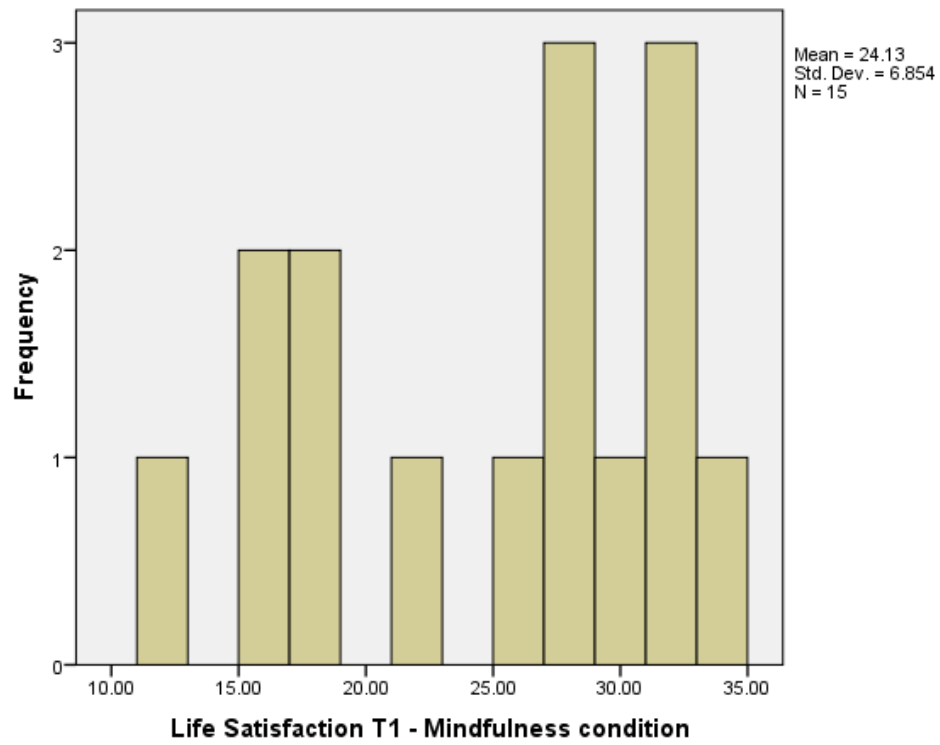
Parent/Guardian signature _____

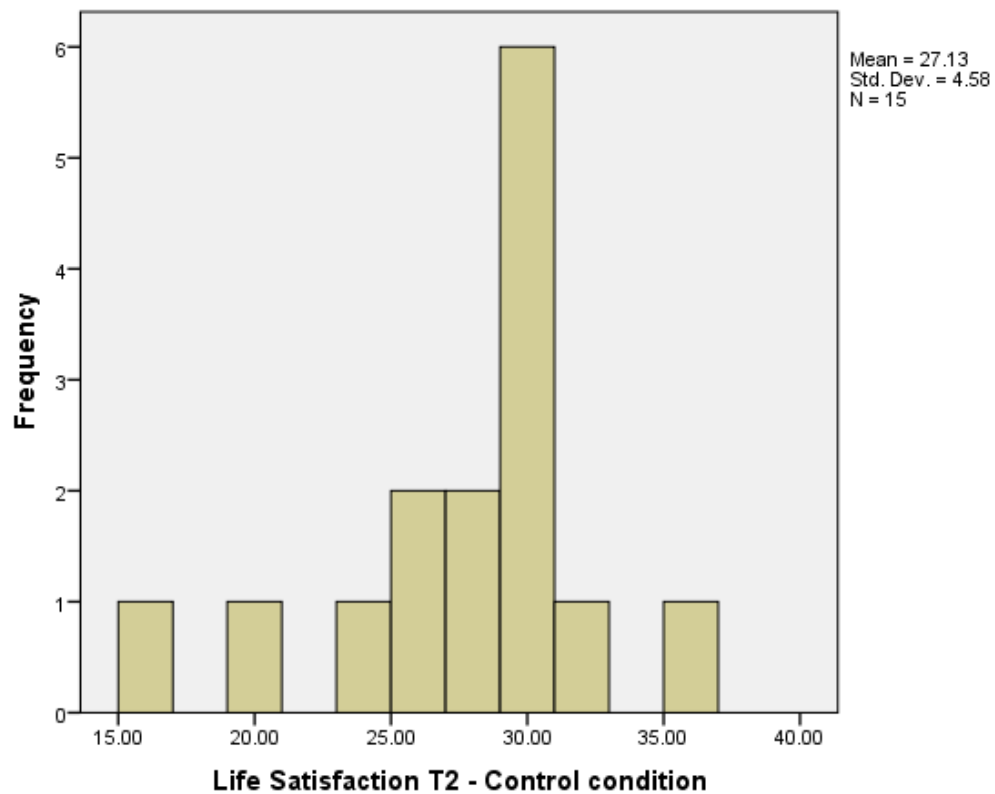
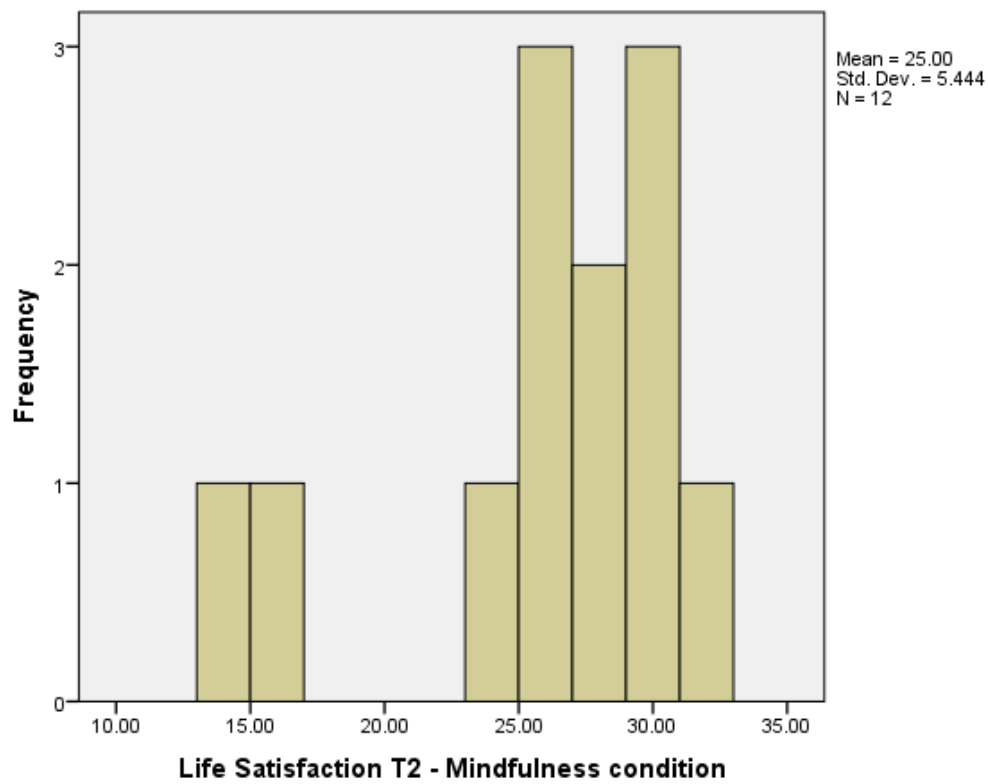
APPENDIX 18 - Histograms showing distribution for outcome variables (Mindfulness)

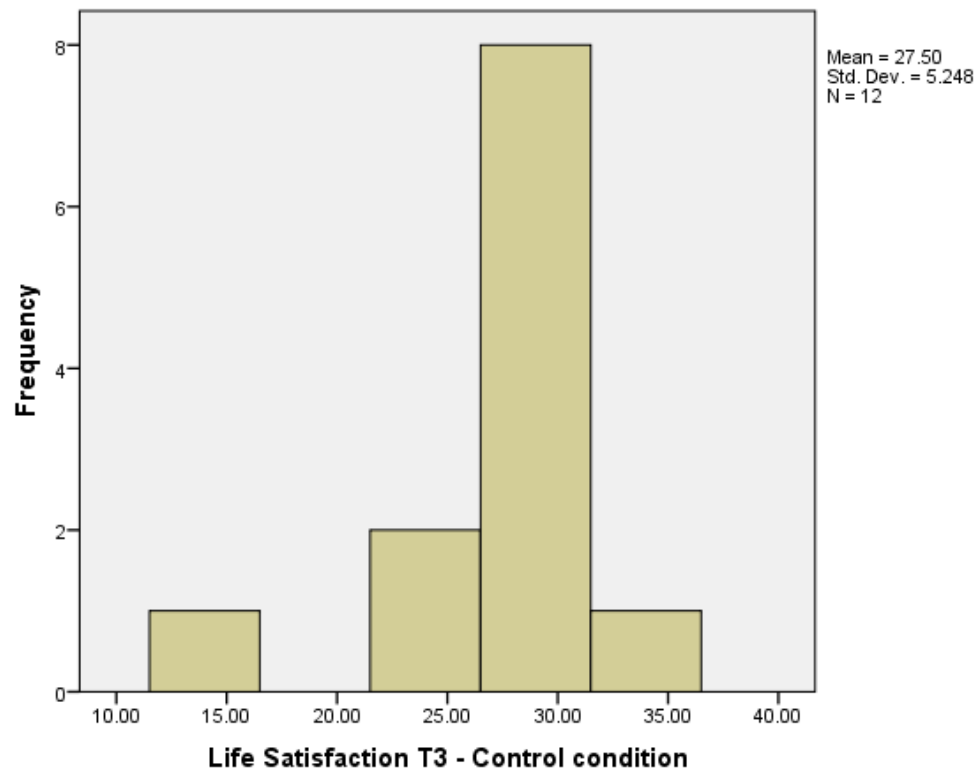
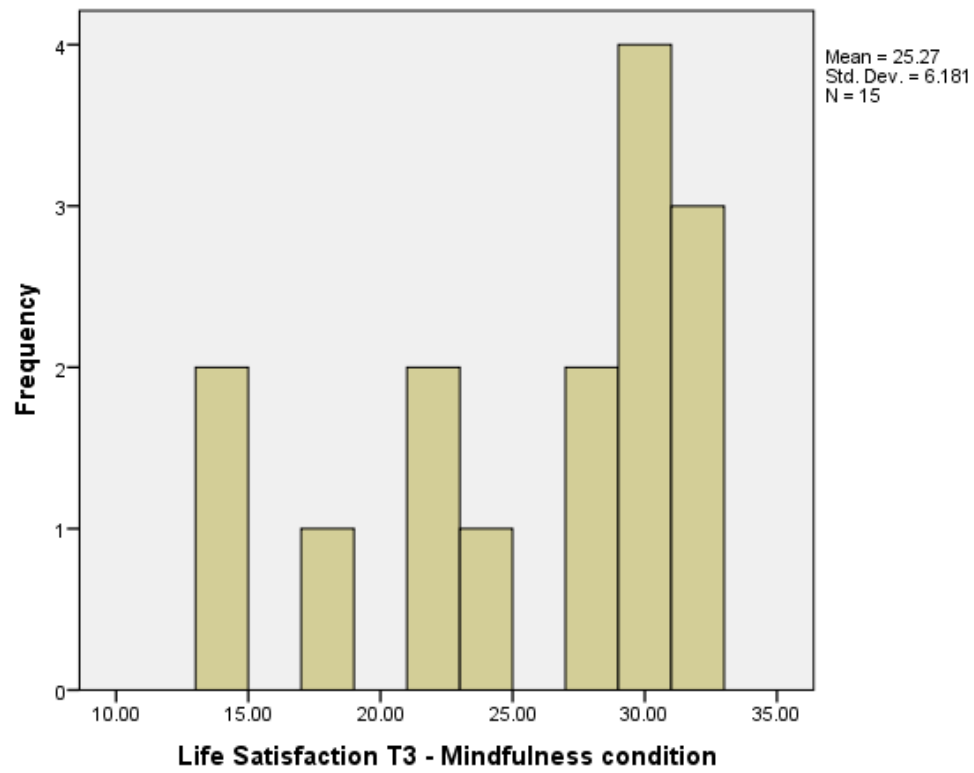


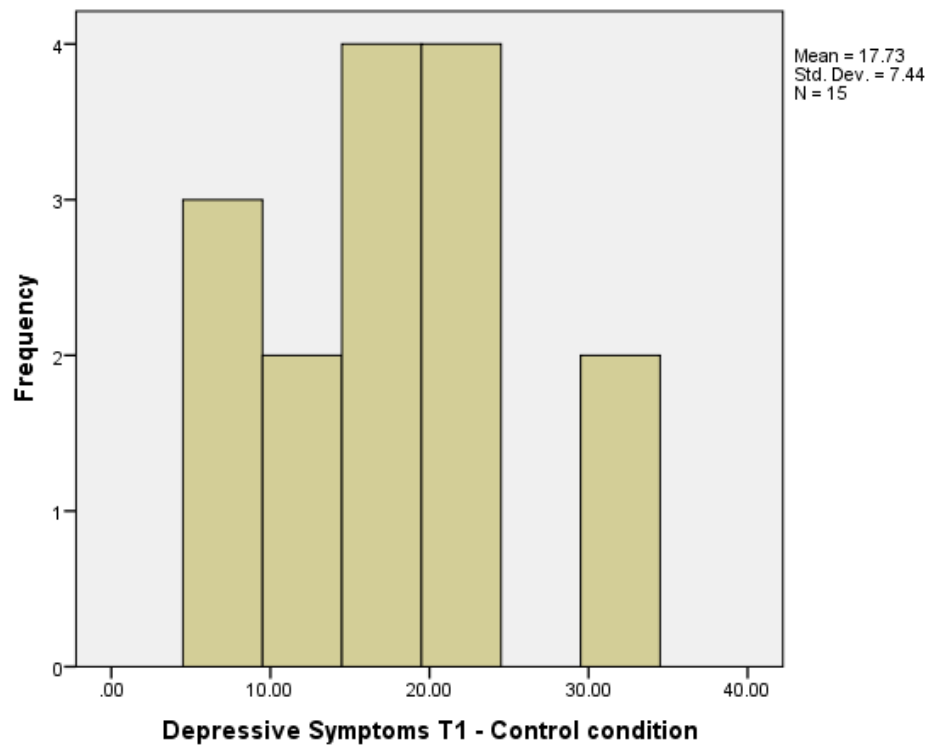
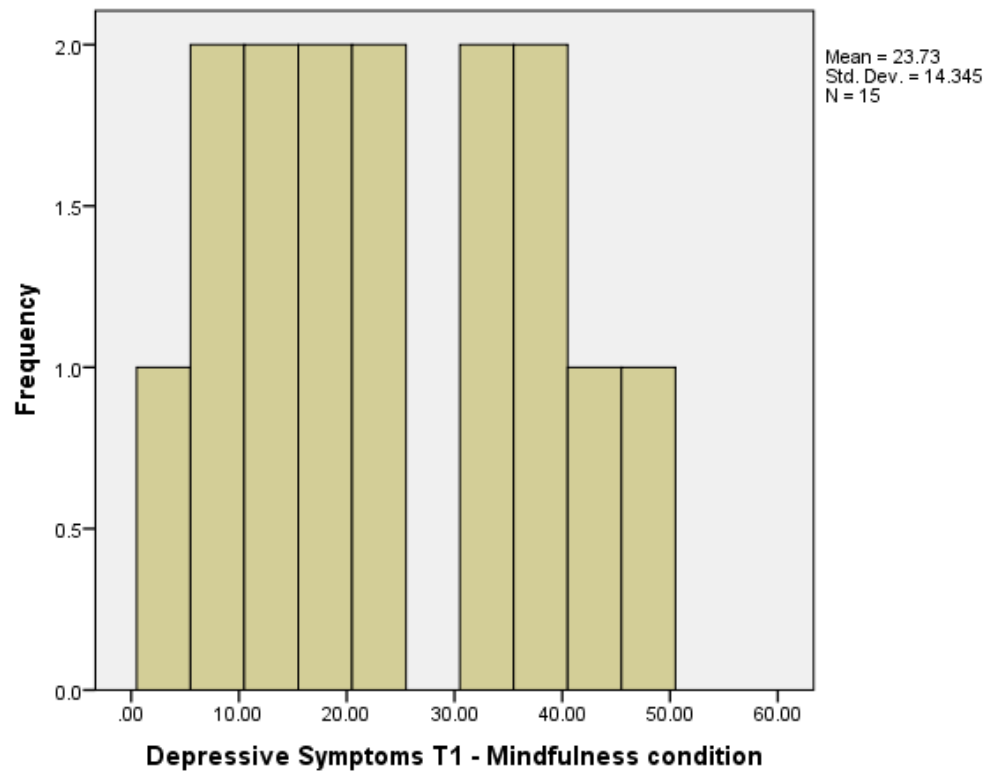


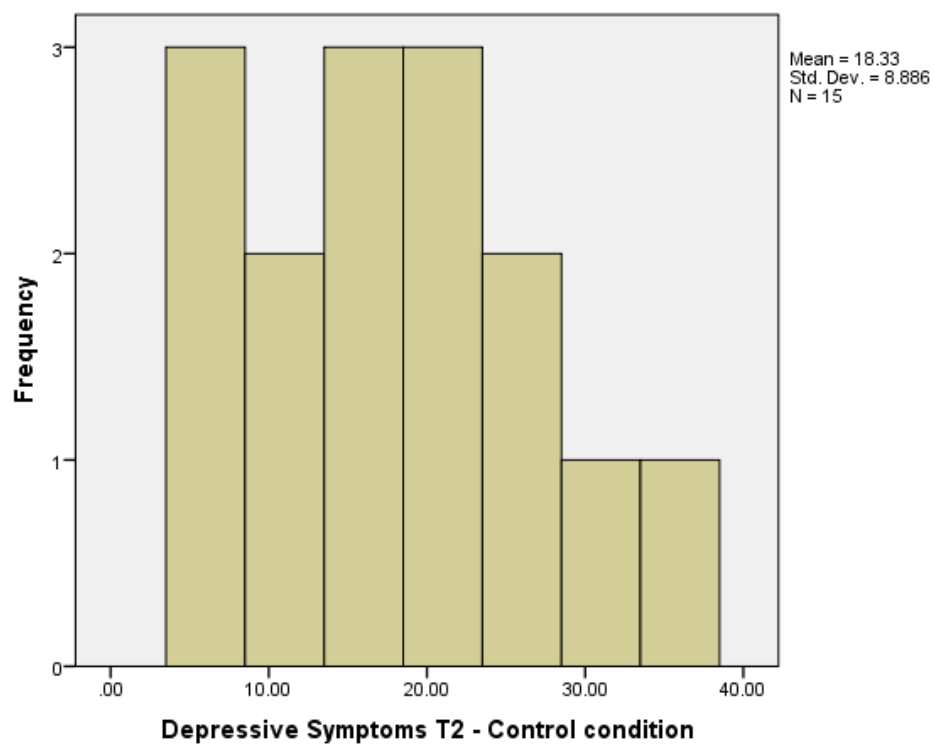
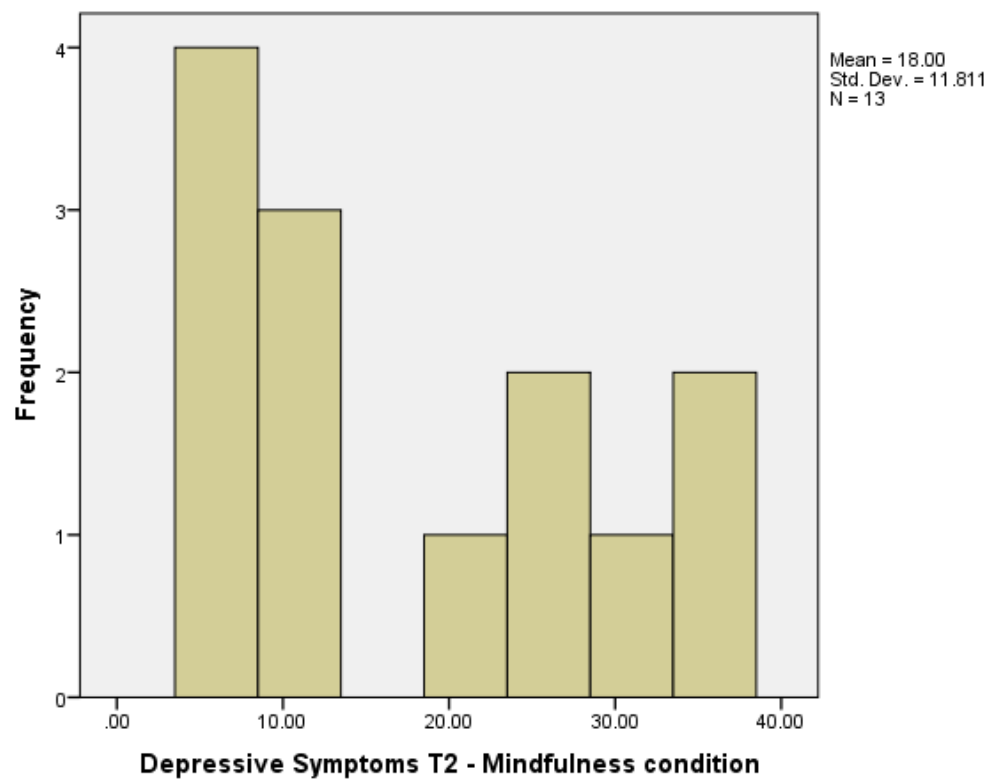


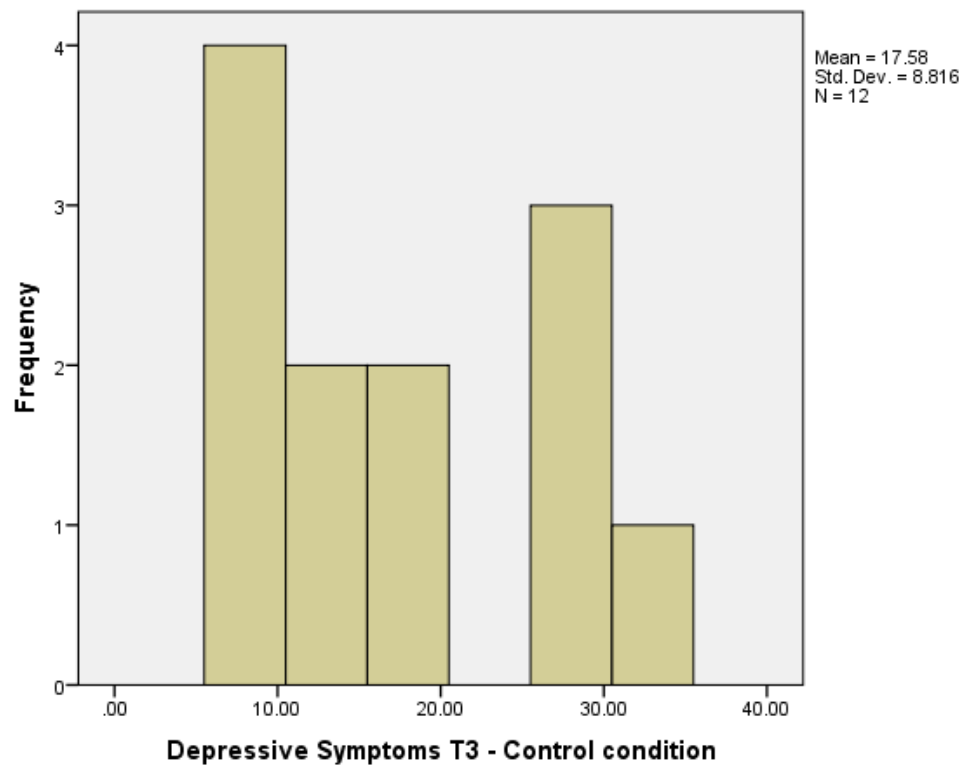
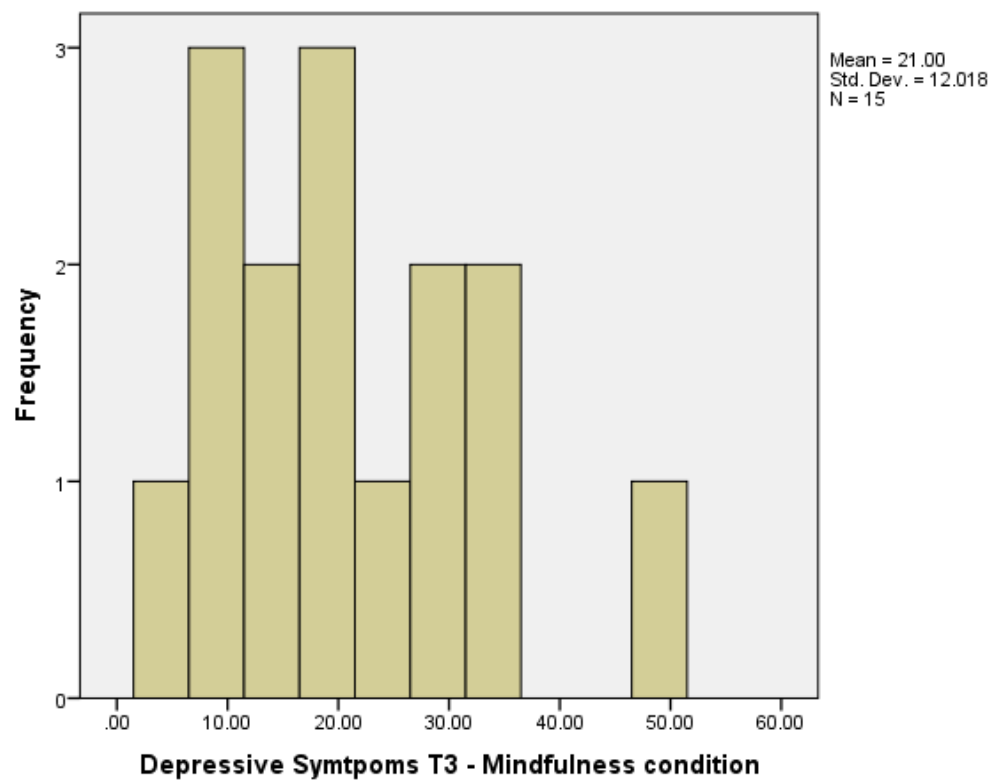












APPENDIX 19 – Gratitude intervention instructions

Week #1 – COUNTING YOUR BLESSINGS

Unique identifier (last four digits of participant's mobile phone number) :

There are many things in our lives, both large and small, that we might be grateful about.

Think back over the past week and write down on the lines below up to five things in your life that you are grateful or thankful for.

APPENDIX 20 - Information sheet for participants (Gratitude)

Purpose of the Study. As part of the requirements for a PhD in Applied Psychology at UCC, I have to carry out a research study. The study is concerned with the experience of well-being in adolescence.

What will the study involve? In the first instance, the study will involve participants completing a short batch of questionnaires. Participants will then be split into two groups on random lines. One half of those participating will be in the active condition and will take part in 'counting blessings' gratitude intervention programme, while the other half will be assigned to a control condition for comparison purposes, and will not receive the intervention. The gratitude intervention will run for four weeks, during which time participants in the active condition will be asked to keep a weekly gratitude log. Participants will be asked to maintain the log on specifically-designed sheets, with these documents also including ratings of mood, physical symptoms, reactions to social support received, time spent exercising, and global life appraisals. At the conclusion of the intervention programme, the full group will again complete a short batch of questionnaires, with these questionnaires again to be taken in September 2013, at the beginning of the following academic year.

Why have you been asked to take part? You have been asked because Transition Year has been judged to be the most appropriate group of students for this research, both in terms of age and accessibility.

Do you have to take part? Participation is voluntary. Because Transition Year students are under 18 years of age, parental consent is required. If either you or your parent/guardian decides against participation, then it is your right to do so. In the event that consent is forthcoming, a consent form will be signed, and you will keep a copy of that form along with this information sheet. You can withdraw consent at any time up to two weeks after completing the study.

Will your participation in the study be kept confidential? Yes. I will ensure that no clues to your identity appear in the thesis, so all participants will remain anonymous.

What will happen to the information which you give? The data will be kept confidential for the duration of the study. On completion of the thesis, the data will be retained for a further six months and then destroyed.

What will happen to the results? The results will be presented in my thesis. They will be seen by my supervisor, a second marker and the external examiner. The thesis may be read by future students on the course. The study may be published in an academic journal.

What are the possible disadvantages of taking part? I don't envisage any negative consequences for you in taking part.

Who has reviewed this study? Approval must be given by the UCC School of Applied Psychology Ethics Committee before studies like this can take place, and this approval has been granted to this study.

Any further queries? If you need any further information, you can contact me via email: mark.a.barry@umail.ucc.ie.

APPENDIX 21 - Consent form for Parents (Gratitude)

School of Applied Psychology,
UCC Enterprise Centre,
North Mall,
Cork city.

**Unique identifier (last four digits of
participant's mobile phone number) :**

Dear Parent/Guardian,

I am writing to request your permission for your son/daughter to participate in research looking at the effectiveness of a number of different interventions designed to increase well-being in adolescents.

This research is being carried out at three schools, with each hosting one of the following three interventions – mindfulness, gratitude, and cognitive behavioural group coaching. The school which your son/daughter is attending has agreed to host the gratitude intervention.

The gratitude intervention will see participants asked to maintain a gratitude log/diary over a period of four weeks. This will see participants asked to focus on aspects of their life for which they feel grateful. There is a growing body of research which indicates that this type of intervention can be beneficial for adolescents.

This research is being conducted as part of a wider PhD research project, which is concerned with adolescent well-being, and also included a survey which was conducted in this school in late 2012. It is hoped that all eligible Transition Year students will take part in the intervention phase, but it is up to every parent/guardian to give their consent or choose not to do so.

This study is taking place against the backdrop of research findings which suggest that mental health problems are common amongst Irish adolescents, and it is hoped that the findings of this PhD thesis will contribute to the ongoing debate about how best to foster well-being and encourage mental health among young people in this country.

What does this involve?

Participating pupils will be asked to complete a series of questionnaires related to well-being. They will then be divided into two groups along random lines, with one group receiving the intervention and the other being used primarily for comparison purposes. The gratitude intervention will see each participating pupil asked to maintain a weekly gratitude log for a period of four weeks. At the conclusion of the intervention programme, the full group will again complete a short batch of questionnaires, with these questionnaires again to be taken in September 2013, at the beginning of the following academic year.

Is participation compulsory?

No. Participation is completely voluntary and dependent upon you giving consent by signing this document and your son/daughter returning it to their school.

What will happen to the data gathered after completion?

All answers/data provided by participants will be typed into a computer by the researcher. The physical documents will be securely stored at UCC's School of Applied Psychology. The data will be analysed by Mark Barry on a secure computer in UCC. No identifying information will be recorded, meaning the anonymity of all participating individuals is guaranteed. The findings will be published in the researcher's PhD thesis, but no individual will be identified.

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If I have any questions, how do I contact the researcher?

I can be contacted via email – mark.a.barry@umail.ucc.ie – or by phone on 087 9274086.

Yours sincerely,

Mark Barry

I give my consent for my son/daughter to take part in this survey research.

Parent/Guardian signature _____

APPENDIX 22 - Histograms showing distribution for outcome variables (Gratitude)

